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F. S. KENFIELD, Pres. F. P. KEENEY, Treas. and Gen. Mgr.
E. DE FOREST WINSLOW, Vice-Pres. O. T. CARSON, Secretary.

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THE THANKSGIVING SPIRIT IN THE LIGHT OF THE PRESENT WAR.

THANKSGIVING day is a time-honored occasion in the history of our country, and it will doubtless continue as such. It is a festive day, when we gather with kindred or friends to celebrate our thanks for the prosperity of the year.

In past years this day of feasting has been ushered in with the blessings of peace round about us. This year, however, the spirit of thanksgiving returns and finds us in the midst of gigantic preparations for battle with a foreign foe.

The men of the plumbing and heating trades, along with business men of every calling, will cherish thoughts, differing much from those of yester year. Intermingled with the appreciation and gratitude, that accompany material bounty, is the gratifying reflection that our country has been able to mobilize great land and naval forces, which will safeguard the future welfare of the republic.

We may well feel confident and even proud of our armed resources. We may rest assured that the spirit of '76 and '61 will again animate and invigorate the hearts of the khaki-clad men, who will soon clash with the forces intent upon perpetuating the name of Hohenzollern—which when freely translated signifies—"high revenue"—a condition which the peculiar head of that restless and eccentric dynasty has established in Belgium, Servia, Roumania and other conquered territory.

Thus in the midst of our thanksgiving festivity we can give further thanks that the fighting spirit of America has been aroused—that the eagle of the republic upon our battle banners, with sharpened talons is eager to see the smoke of battle. We can feel confident that the wild imperialistic dreams and despotic designs of the House of Hohenzollern are about to be challenged by the world's greatest democracy.

Although the trend of the war is now apparently favoring the enemy in the Italian campaign, we have no adequate reason to permit the gloom of pessimism to overshadow us in the midst of our thanksgiving. We must remember that reverses are often the fore-runners of ultimate victory, inasmuch as disaster will often serve to create a mightier determination to gain the mastery.

Optimism and courage are therefore the need of the hour, not only in our co-operation with our allies but in the organization and concentration of our business interest—to the extent that we may serve the nation and yet keep normal the pulse of industrial activity.

Duty to the nation as well as to ourselves should unquestionably be the guiding spirit of our thanksgiving. A new and greater national spirit has been awakened in the business man, and we can all agree with President Wilson, when he says in his thanksgiving proclamation:

"In this day of the revelation of our duty not only to defend our own rights as a nation, but to defend also the rights of free men throughout the world, there has been vouchsafed us in full and inspiring measure the resolution and spirit of united action. We have been brought to one mind and purpose. A new vigor of common counsel and common action has been revealed to us. We should especially thank God that in such circumstances, in the midst of the greatest enterprise that spirits of men have ever entered upon, we have, if we but observe a reasonable and praticable economy, abundance with which to supply the needs of those associated with us as well as our own. A new light shines about us. The great duties of a new day awaken a new and greater national spirit in us. We shall never again be divided or wonder what stuff we are made of."

European Plumbing and Sanitation

Notes on Plumbing As It Is Done in Great Britain, France, Belgium, Germany, Austria and Russia

By ARTHUR BATEMAN

Continued from Page 259 in the November 17th Issue.

Pneumatic Ejectors.

IN THE large cities many of the modern buildings have basements and sub-basements which are entirely too low to drain to the sewers.

It then becomes necessary to install centrifugal pumps or automatic ejectors, operated by compressed air, to raise the sewage above the level of the public sewer. Several types of these devices are in general use.

Sewers may be laid to give a self-cleansing flow, as the ejectors may be placed in any position.

The ejectors may be used for the transmission of pail garbage and sludge.

Baths, Lavatories, Urinals and Sinks.

Baths, lavatories, urinals and sinks differ little from those in use in this country.

Baths are made of castiron and porcelain. They have provision for both filling and emptying rapidly. Boarded or other surroundings are not recommended, in fact, they are prohibited in most places. The U traps predominate

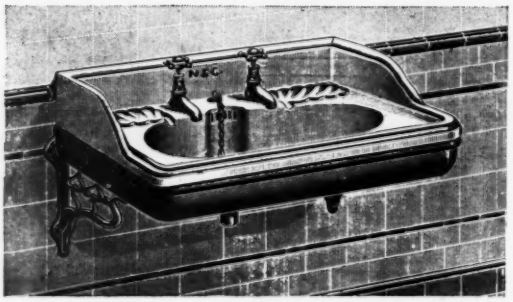


Fig. 13.

and are of iron, lead, copper, or brass, but in no case of zinc. They are 2 inches in diameter.

Most lavatories are constructed of porcelain and are provided with back and skirting as shown in Fig. 13. Painted or galvanized iron brackets screwed to the wall support the basin which has a gun-metal washer, vulcanite plug, nickeled brass chain and chain stay, and gun-metal washer screw-down valves, or faucets. The standard sizes are as follows: 30x22 inches, 27x19 inches, 25x18 inches, and 22x16 inches.

A 1¼-inch S trap with 2¾-inch depth of water seal is fixed close under the basin and connected to the main waste with as short a length of pipe as possible, to avoid the necessity of secondary ventilation. All traps must be able to be cleansed. The cleansing holes must be fitted with caps and not with screwed plugs. Lavatories for large establishments, or factories, or barracks, must be planned and receive special sanction.

Although many lip urinals are in use the solid porcelain, constructed in one piece on the stall principle, is recommended as the most sanitary. Like our own, they possess ideal sanitary features. The sides are vertical, the corners are rounded. The top is fitted with a flushing rim or concealed perforated copper or brass pipe, through which the fixture is flushed. Practically all these urinals are flushed automatically. The outlet to the waste is protected with a brass grid to retard cigar butts, matches, etc., passing into and stopping up the trap, or waste pipe.

Only non-porous materials may be used for sinks. Their outlets must have fixed grids, and the holes must not exceed ⅜ inch in diameter. The trap and waste pipe must be 2 inches in diameter. The water supply must be 1 inch above the rim of all sinks. When lead pipes are used they must have the following weights: 1 inch, 2 pounds per foot; 1⅛ inch, 2.8 pounds per foot; 1⅛ inch, 4.2 pounds per foot; 2 inch, 5.2 pounds per foot.

Sewage Disposal.

Throughout Europe, bacteriolysis is the popular principle employed for sewage purification, and numerous and complex systems are giving satisfaction today, although it may be truly said, no country in Europe has reached the acme of perfection in this important and difficult work.

The honor of the discovery of the bacterial purification of sewage is shared by many men and countries. Van Leeuwenhock, a Dutchman, first discovered bacteria while looking through a miscroscope in the year 1686. Schloessing, in France, discovered that sewage passing through a bed of baked sand and burnt clay became purified. When chloroform was added the purification ceased, and when it was removed purification commenced again. Hence he concluded that living organisms were at work. Pasteur, of France, and Frankland, of England, both proved the operative process of aerobic and anaerobic bacteria.

However, the real discovery of the bacterial treatment of sewage disposal falls to the Massachusetts State Board of Health which carried out numerous experiments in 1889 and gave the world its valuable findings in the year 1890.

The report stirred the minds of both chemists and engi-

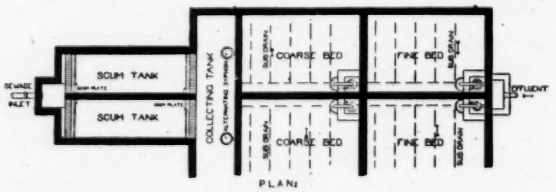


Fig. 14.

neers the world over, and in the year 1892 septic tanks were designed by Scott-Moncrieff, Dibden, Cameron, and many others.

One modern type of the septic tank and bacterial beds adopted in Europe is shown in Fig. 14. The crude sewage passes through a preliminary subsidence in tanks, and is then passed on to a bed of coarse stone, having large crevices, in order that the large suspended solids have ac-

cess to the material below the surface, where the organisms work in the dark. The effluent is then passed on to a fine bed, where the liquid is divided into thin films, which provide a large surface for the activity of the organisms. The first bed is composed of material of any description in lumps, about 3 inches in diameter, that may be in the neighborhood. The second bed is composed of finer material, that is, of fragments, about ½ inch to ⅜ inch in diameter.

The first bed is known as the "primary," the second as the "secondary," the object being to equalize the work. The primary bed, being of large material, enables the large solids to enter into the center, and are there operated upon by the organisms. The secondary bed, dividing the liquid into thin films, permits an oxygen supply to the organism or organisms which complete the purification. The sewage is then passed on to the land direct.

Dr. Karl Imhoff, a German, must be given credit for the design of a tank named after him, which is one of the latest European improvements in sewage purification.

He solved the problem of eliminating the nuisance aris-

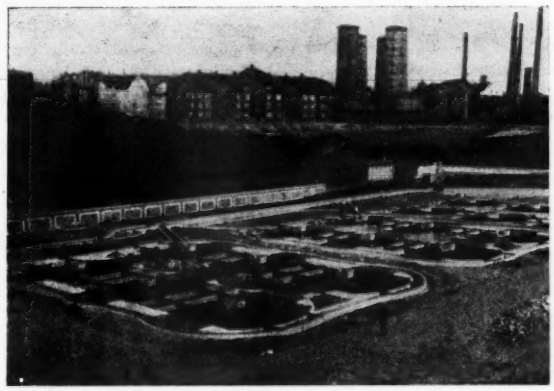


Fig. 15.

ing from the settling or septic tanks, where offensive odors are in many cases given off by the effluents due to the anaerobic action in the compartments. The difficulties experienced in handling the sludge and obtaining thorough digestion of it, before it is removed from the tanks, have resulted in the development of a type of tank, where the sewage, flowing through the tank, is kept entirely separate from the deposited suspended matters. It has been found also that septic action does not benefit the liquids for the secondary treatment on the biological filters, but that it in fact is preferable to get the liquids to the biological filters in a condition as fresh as possible, in order to retain some oxygen, which would be favorable in the secondary treatment. These tanks, as shown in Fig. 15, are in operation at Essen, Germany.

In these tanks the sewage flows through an upper compartment under the conditions previously specified for travel and velocity, but with a retention period of from one to four hours. The compartment is equipped with a sloping bottom placed on a slope of 1.2 vertical to 1 horizontal, and terminating in a sealed slot, with a lap horizontally of at least 8 inches. This slot discharges into a lower compartment that has no connection with the upper compartment other than the sealed slot. This lower compartment is designed to retain a capacity of at least six months' sludge, based on a capacity of 1,000 cubic feet per thousand inhabitants. The lower compartment is usually built cone-shaped, terminating in a slump at the bottom, from which there is a discharge line for the sludge bed. There must also be an opening from the compartment to the surface, as a discharge for gases and as an admission for cleaning. As the sludge is drawn from the bottom of the compartment, and as there is six months' capacity for anaerobic action, if the sludge is drawn off in small quan-

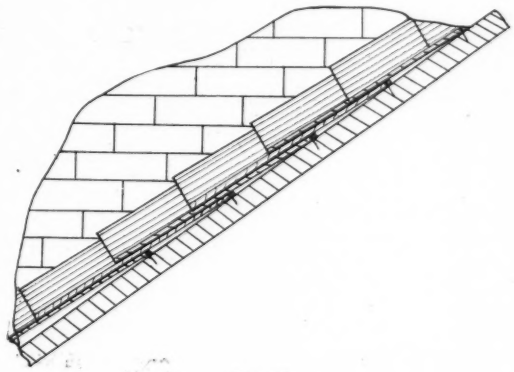


Fig. 16.

tities at intervals of six weeks, only thoroughly worked over sludge will be placed on the sludge beds, and the result is that there can be no nuisance.

Roof Work.

At one time the most important work of the plumber was to cover domes, towers, finials, and roofs of buildings with cast and milled lead. He also laid leaden gutters of all kinds, cast his own rain water pipes, heads, ornamental ridges, hips, etc., and was recognized as an artist in lead and solder.

Throughout Europe today, a plumber must be a skilled worker of lead, for this metal as a roof covering is much in evidence.

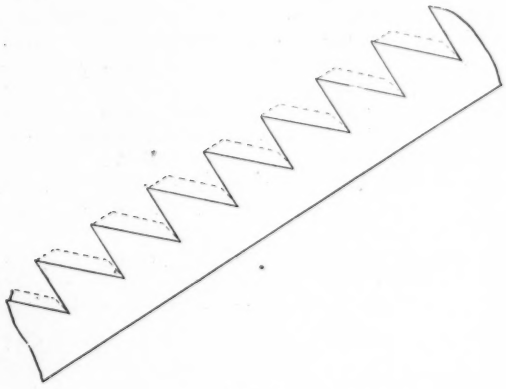


Fig. 17.

However, what the future will bring forth along these lines is problematical, for should the war last much longer the lead supply throughout the world will be exhausted, and another metal will have to be substituted, or the method of roof construction will have to be materially altered.

Past experience in the Boer, the Russo-Japanese, and the Balkan wars prove that it takes much more than his own weight in lead to kill a man in battle, and it is safe to assume that approximately 160 pounds of lead are used for each person killed in the war.

Bulgaria in the last war used 32,000,000 rifle bullets, and

27,000,000 shrapnel balls, so that scarcely more than 1 in 200 bullets found its human billet.

Assuming that 7,000,000 men have been killed to date, 1,120,000,000 pounds of lead have already been used and at this rate the supply, in my opinion, is sure to give out at an early date.

The old time cast lead used in connection with roof

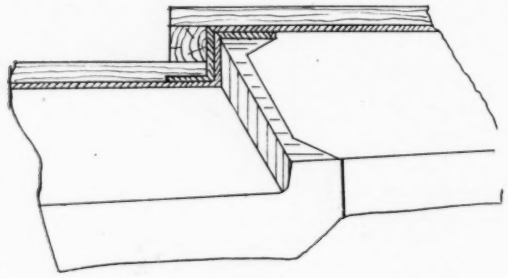


Fig. 18.

work is rarely used these days, with the exception of alteration work on large jobs, where the architect occasionally specifies that the old lead shall be recast on a sand bed casting frame, on the job.

The specified thickness of the lead is obtained by pushing a strike over the molten lead after it has been run on the frame. This removes all surplus lead and reduces it to a uniform and specified thickness.

Milled lead predominates as a roof covering at this time. After the lead is cast in molds averaging 6 feet in length by 5 feet in width, it is passed between heavy steel rollers which reduces the thickness from 1/20 to ½ of an inch in thickness. This is classed according to its weight per super foot. Thus 7-pound sheet lead means that 1 square foot weighs 7 pounds. For all ordinary purposes milled lead of a weight equal to 6 pounds per square foot is used.

The art of working lead known as "lead bossing," is difficult and requires considerable practice, endless patience, and, to a great extent, is a gift acquired by only few.

The majority of the European roofs are slated or tiled, but even when so, the junction with chimneys and walls must be made weather tight with flashings. Flashings consist of soakers or understraps and step flashings, while on continuous runs such as a parapet gutter, running flashings are necessary.

To form a water-tight connection between a slated or tiled roof and vertical wall abutments soakers are necessary. These can be described as slates with the edge turned up 3 inches against the wall, and each soaker should have the lap of the slates as shown in Fig. 16. The general rule for determining the lap for soakers is as follows: Allow 3 inches up the wall, add half the width of the slate or tile for one dimension, and then, to the depth of the courses add the horizontal lap of the slates or tiles, which is commonly 3 inches, then add ½ inch more so that the soaker can be nailed to the lath or boarding above the top edge of the slate or tile upon which it is laid.

To make a water-proof job, step flashings must be fixed over the soakers, lapping them 2 inches or more. If the European master plumber has numerous small pieces of used lead at his disposal he arranges the flashings in single steps, but more often they take the continuous form as outlined in Fig. 17. To set out this form of step flashing one must be careful to cut the lead wide enough to allow the free edges of the steps to slope backward. To form the steps and to overlap the soakers, the lead should not be less than 6 inches in width. It now becomes necessary to mark where the joints come, and this is easily done by placing the strip of lead in a temporary position, and with a ruler, laid along the joints, mark continuously along the lead. When the positions for the turnings have been marked, about 1 inch is allowed on each step for finding its home in the joint, and the surplus lead is then cut off. The portion in the joint is secured by lead wedges, and the joint is pointed up with Portland cement.

The main feature to keep in mind when laying lead on flats or in gutters is to see that no piece of lead contains more than 20 square feet, and that each piece has perfect freedom to expand and contract with every change of temperature. Such small pieces of lead necessitate a number of joints, both parallel with, and across the flow. The latter are called drips, and Fig. 18 shows a typical arrangement of such. The drip, which should never be less than 2 inches in depth, is formed by bossing up the lower portion of a flat or gutter some 3 or 4 inches, then rebating the thickness of the lead, about 1 inch wide into the boards forming the drip of the gutter or flat immediately above it. The top portion of lead or overlap is then bossed down and trimmed off, as shown in the sketch.

Wooden or hollow rolls form the joints parallel with the flow of water, both on flats and in those gutters of a greater width than 3 feet. Solid wooden rolls, 2 inches in height by 1¾ inches in width at the widest part, and 1

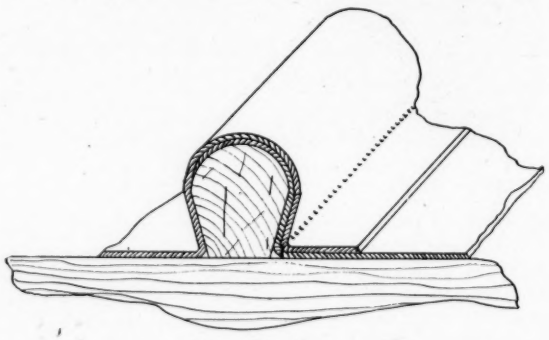


Fig. 19.

inch at the bottom, as shown in Fig. 19, are securely nailed to the boarding at intervals of 2 feet 3 inches to 2 feet 8 inches, according to the general layout of the flat or large gutters. The undercloak is bossed three-fourths round the roll and the edge of the lead is rasped off so that no undue thickness will be apparent in the overcloak. The overcloak is bossed completely over the undercloak and finishes off with a width of about 1½ inches on the flat. The undercloak requires 3½ inches and the overcloak 8 inches

(To be Continued.)

Conditional Debts and Payments.

If the existence of a debt is conditioned upon the happening of an event, it cannot become enforceable until the event happens, but if a promise is made which constitutes a present liability, and payment is postponed until the happening of an event which does not happen, the law requires payment to be made within a reasonable time.—Supreme Court of Kansas in Greenstreet vs. Cheatum et al., 161 Pacific Reporter, 596.

Heating, Ventilation and Hot-Water Supply for the Laundry

Notes on the Proper Installation of the Mechanical Equipment in the Modern Laundry

By CHAS. L. HUBBARD

Continued from Page 256 in the November 17th Issue.

We have already found that it requires approximately 1,300 B.t.u. to raise the temperature of 1 gallon of water from 50 to 210 degrees. Hence, 1 square foot of grate area should be provided for each 28,000÷1,300=21½ gallons to be heated through this range, which, in round numbers, may be taken as 20. Automatic temperature regulators should be used with both types of heaters. These are connected either into the storage tank, or the flow pipe connecting the heater with the tank. In case of the coil heaters they are arranged to shut off the steam supply and with the other type to manipulate the dampers of the heater.

Steam Supply.

A laundry requires a large amount of steam, as compared with other industries, and the boiler plant forms an important part of the equipment. Ordinarily steam is required for running the engine, water heating, drying, heating the mangles and for warming and ventilating the building. When a laundry is connected with a hotel or institution the steam is usually supplied from the main power plant, but in any case the required boiler capacity must be determined for this particular part of the work. The amount of steam for various purposes must be computed in different ways and is best reduced to pounds per hour. The equipment of a laundry, outside of the boiler and heating apparatus, is commonly furnished by some concern making a specialty of this class of work, and data relating to the steam consumption for different purposes must be obtained from the makers. Most of the steam used will be low pressure, only the engine and mangles requiring high pressure. All condensation free from oil should be trapped to a receiver and returned to the boilers.

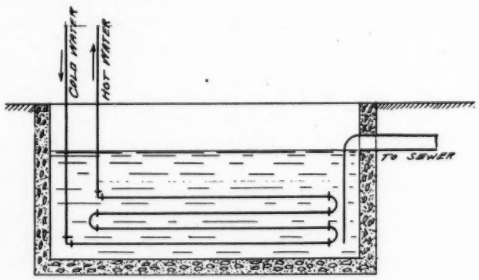


Fig. 7.—Concrete Well for Waste Hot Water with Heating Coil.

In some cases a substantial saving has been made by discharging all waste hot water, such as oily drips, used water from washers, etc., into a tank or cement well containing a pipe coil through which the cold supply to boilers and hot-water heater is first passed. By using this arrangement (See Fig. 7) the temperature can sometimes be raised to 80 or 90 degrees by means of heat, which would otherwise be wasted.

A typical piping layout for laundry work is shown in diagram in Fig. 8. The sizes of steam, exhaust, and drip piping are usually fixed by the outlets upon the different pieces of apparatus. In making the steam connection to the engine, the supply pipe should be taken from the top of the high-pressure main, to obtain as dry steam as possible for this purpose.

Steam Piping.

A "bleeder" pipe or drip should be connected into the pipe just above the throttle (unless a separator is used) for discharging any condensation, which may have collected before starting up the engine. The cylinder cocks should be piped to a dry well or blow-off tank, and the bleeder pipe may be connected with the same pipe. As high-pressure steam is required for the engine and mangles, the boiler should be of the high-pressure type, designed for a working pressure of 100 pounds, although it may not be called upon to carry more than 70 or 80, depending upon the type and size of engine.

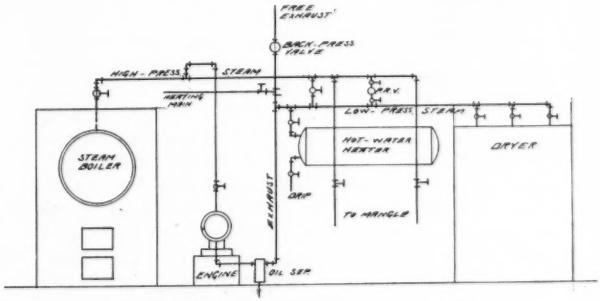


Fig. 8.—Typical Steam Layout for Laundry.

When the dryer is furnished with the regular laundry equipment, the best method of piping will depend somewhat upon the relation between its size and the quantity of exhaust steam, which is available. Also the amount of hot water required is another factor to be considered in connection with the piping layout.

If there is sufficient exhaust steam to supply the full requirements of the dryer, there is no need of separating it into sections, as it is usually customary to trap the condensation to the sewer, rather than to purify it of oil and return it to the boiler. If the quantity of steam required is greater than the exhaust, sufficient live steam may be admitted through a reducing valve to make up the deficiency. This, if small in amount, may be mixed with the exhaust, but for any considerable quantity it is best to condense it in separate sections of the heater and trap the return water back to the receiving tank. In plants of large size it will be found a matter of economy to install an oil separator in the main exhaust pipe and return all condensation to the receiver, thus saving the heat in the water, which amounts to approximately 150 B.t.u. per pound of water under average winter condi-

tions. When this is done, live steam at reduced pressure may be turned into the exhaust main, which may then serve as a general low-pressure supply for the plant.

Power as a Laundry By-Product.

Strange as it may seem at first thought, a large commercial laundry offers an excellent opportunity for the sale of power, as a by-product, at an extremely low cost. This is made possible by the fact that the amount of steam required for heating and various other laundry processes is large in proportion to that necessary for power, and also the greater part of this may be used at low pressure. For example, suppose a large plant requires 7,000 pounds of steam per hour for heating water and for use in the various machines and dryers; also that the power requirements call for 75 horsepower. Suppose the steam is used at a pressure of 5 pounds in the laundry processes, and that 30 pounds of steam, per horsepower per hour at 100 pounds pressure, are required for the engine. Furthermore, that 85 per cent of the steam supplied to the engine is discharged as exhaust at 5 pounds pressure and turned into the general low-pressure supply, after being purified from oil. Then, the total steam required by the boilers per hour will be $75\times30=2,250$ pounds at 100 pounds pressure, and $7,000-1,912=5,088$ pounds at 5 pounds pressure (1,912 being the weight of the exhaust, or 85 per cent of 2,250). The total heat of evaporation of steam at 100 pounds pressure is 1,188 B.t.u. and at 5 pounds pressure 1,156 B.t.u., hence the total heat requirements are $(1,188\times2,250)+(1,156\times5,088)=8,554,728$ B.t.u. per hour.

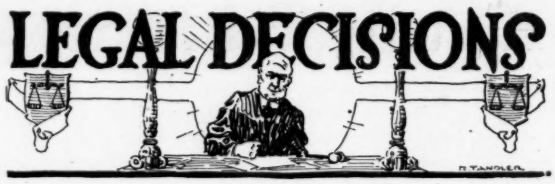
Now, in place of the 75 horsepower, high-speed simple engine taking 30 pounds of steam per horsepower, suppose we install a 400 horsepower, medium-speed compound engine, requiring 21 pounds of steam per horsepower, and high-pressure boilers of sufficient capacity to generate $400\times21=8,400$ pounds of steam per hour at 100 pounds pressure, requiring $1,188\times8,400=9,979,200$ B.t.u. per hour. By operating this engine we shall generate 400 horsepower, of which $400-75=325$ horsepower may be sold. The exhaust from the engine will be $8,400\times0.85=7,140$ pounds per hour, or more than enough to supply the total laundry uses. The heat requirements under the new arrangement have been increased $9,979,200-8,554,728=1,424,472$ B.t.u. per hour which corresponds to $1,424,472\div1,188=1,200$ (nearly) pounds of steam at 100 pounds pressure, making the steam consumption for the power sold only $1,200\div325=3.7$ pounds per horsepower.

From this result, it is evident that under the assumed conditions, a large amount of power could be sold at a good profit, even after deducting interest charges, depreciation, etc., upon the increased cost of the plant. This, of course, is worth considering only in connection with a large plant.

ALLOYS OF IRON AND ZINC.

Experiments made in Germany since the war began have shown that it is possible to convert alloys of zinc and iron into quite uniform metals, suitable for casting, by stirring into the molten iron-zinc alloys from 8 to 10 per cent or more of either manganese free from carbon or of a high percentage ferro-manganese in the molten state, and that it is generally possible in this manner to effect the complete absorption of the manganese by the alloy in a single operation.

When molten ferro-manganese is employed, little or no carbon will be separated out, and both the manganese carbides and the metallic manganese will be dissolved in the other metals forming the alloys, the influence exerted by the carbides being limited to the fact that their presence imparts a greater degree of hardness to the resulting metallic alloys than would be the case were manganese free from carbon employed.



Dealing with Faith in Others.

A party dealing with another in good faith has the right under all ordinary circumstances to assume that the other party has dealt with him in like good faith until he discovers that he has been made the victim of fraud or until he has knowledge or notice of facts which should induce him as a man of ordinary prudence to make an investigation which would lead to such discovery. One engaged in business transactions is not bound to look with suspicion on every person with whom he deals or to make such person the subject of constant inspection or searching inquiry to discover some possible fraud concealed therein, and not until one knows that he has been deceived in this respect or has credible information, which ought in reason to excite in his mind a well-grounded suspicion that he has been overreached, is he charged with the duty of diligent action.—Supreme Court of Iowa in Rohr vs. Shaffer et al., 160 Northwestern Reporter, 279.

First Requisite of Contracts.

It is elementary to say that in order to make a contract there must be an agreement. In fact, there cannot be a contract, unless all parties to the negotiations mutually assent. There must be an intention common to both, or all, who are bound. This intention must be made known by the words used by them when the assent is given. The intention must be communicated, and what is communicated and assented to is the contract. In other words, there must be a meeting of the minds of the parties in agreement. The things the minds agree upon is the contract.—Court of Appeals of Kentucky in Springfield Fire & Marine Ins. Co. vs. Snowden, 191 Southwestern Reporter, 439.

Necessary Witnesses to Accounts.

It seems to be well settled that the various inferior employes of a large business, whose memoranda of time, material, receipts, deliveries, and the like are the basis of an account, need not be called as witnesses. But the ordinary protection of the other part of the business world seems to require that the supervising employes, under whose management and observation this work goes on, and who receive, consolidate, and transmit this data to those who make up the permanent account, should be called, if reasonably accessible. If this is not required, the matter will rest entirely upon the fact that it is something done in the regular course of the business, and not at all upon the oath of any one having personal knowledge of it.—Supreme Court of Vermont in Squires vs. O'Connell et al., 99 Atlantic Reporter, 268.

Contracts.

One who signs a contract is presumed to know and understand its terms and obligations. A mere failure to read or inform oneself of its terms and obligations is not a defense. If this were permitted contracts would not be worth the paper on which they are written. Contracts would then not have even the binding force of a treaty between sovereign nations who wish to repudiate the same —they would not rise to the dignity of a "mere scrap of paper."—Springfield (Mo.) Court of Appeals in Deming Investmennt Co. vs. Wasson, 192 Southwestern Reporter, 764.

QUESTIONS & ANSWERS

SANITARY PLUMBING PROBLEMS AT CAMP SHERMAN DISCUSSED.

Editor "Domestic Engineering:"—The question has arisen here as to the proper placing of the pop or check valves on hot water heaters, as shown in Fig. 1. Will you kindly set us right?

The plans call for placing the pop or safety valve on the bottom connection or flow from boiler to heater, as shown. I contend that it should be placed at place marked X for the following reasons:

That with the safety valve of the pattern used, where simply the tightening of the cap nut sets the pressure of the pop, an inexperienced person, or even an experienced person, will be liable to set it down tighter when water comes out of it, without realizing that it may be the pressure raising the valve. Only water will blow out, and people may believe it is leaking. If it was located at the

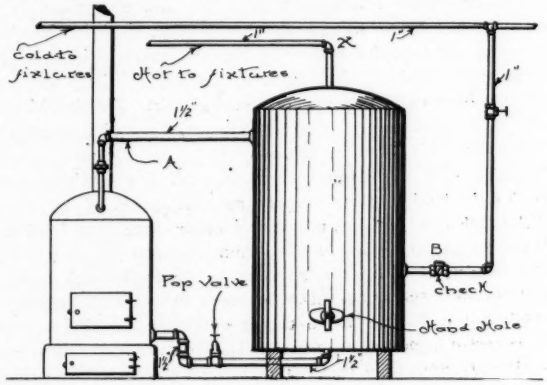


Fig. 1.

top, it would blow steam and at once be noticed. This relief valve is not marked and set at a certain pressure as some valves are.

Besides, being at the bottom when it does blow off, it will naturally blow out any scale in boiler, which on account of construction of valve will not let it through. Scale, therefore, accumulates on seat and lets it leak. And being at the bottom, anybody with a wrench, or pair of pliers, will be apt to fool with it, as it is so handy.

It is the steam you want to get rid of, because it is the steam that makes the added pressure, displacing the cold water, which should be flowing through heater.

Being set at the bottom it will blow part of the cold water entering the boiler right out with the hot and does not directly take care of the steam already poured in the boiler.

Can broken or defective sections of sectional boilers, or cast iron heaters, be welded successfully? What process is used and how?

They are having a great deal of trouble here on account of hard water. The hot water flow pipes from range to boiler liming up almost solid in six weeks' time. Do you think the small individual water softeners, or "bricks," would be successful? Where should they properly be placed, in your estimation?

Camp Sherman. Sergeant.

"Sergeant" wrote his inquiry on both sides of his paper, and if he had been any other person than "a man in the uniform," we would have protested, but we will always forgive a soldier.

It has been a fixed rule right along until now, that all inquiries be written on one side of paper only. This was necessary to prevent errors in printing. From now on to the end of the war we will be pleased to accept letters from soldiers written on anything, even if they be written on both sides of an old collar, so long as we can read them. We want to help the boys all we can.

Regarding Fig. 1, we are sure that "Sergeant" is right. The relief valve should be up where steam will blow from it instead of cold water. It may be located at X, as he suggests, or it may be on pipe A. In either location it will blow steam when steam is generated and the pressure exceeds that at which the valve is set.

Furthermore we consider it advisable to dispense with check valve B unless there is a very good reason for having it there. This check valve, if perfectly tight, will prevent expanded water from being relieved back into the mains. It therefore will cause relief valve to weep, or discharge water, when tank water is being heated while none is being drawn at faucets.

It would have been far better if cold supply were brought down through top of boiler with inner tube in ordinary manner, providing inner tube had a small vent hole drilled in same at top. Then there would be no danger of syphoning boiler and heater down to a dangerously low level when cold supply is shut off at any time.

Another draw-back to Fig. 1 is this, that cold water feed pipe injects cold water too high in boiler, so high that it will cool a considerable quantity of the hot water in boiler, and thereby reduce the available hot water storage space.

Broken or defective sections of cast iron boilers may be welded by an oxy-acetylene blow-pipe flame, but ordinarily it is considered better to replace them with new sections. Manufacturers of oxy-acetylene apparatus furnish instructions with the machines. It is simply a case of melting the metal together all around and over the cracks. Additional metal is melted on over the cracks to build up a body. An important part of the operation is to properly fuse the added metal to the casting on both sides of the crack, so it will take hold, so to speak. The success of this work depends principally upon the skill of the blow-pipe operator.

To prevent lime in hard water from incrusting inside water-backs and hot-water circulation pipes, many plumb-

ers resort to individual water softeners referred to. These can be bought from reputable plumbing supply houses. They are connected on the pipe which conveys cold water from bottom of range boiler to lower tapping of water-back.

They are charged with such chemicals as may be best suited to the particular water. And by neutralizing the lime they cause it to precipitate rather than incrust, thereby lengthening the periods between cleaning-out operations.

TROUBLE WITH A HYDRAULIC RAM LOSING ITS AIR.

Editor "Domestic Engineering":—We have run up against a problem, and we would appreciate your assistance in solving it.

A hydraulic ram has been running for years and given very little trouble. About a year ago the head started to be filled with water. We changed the head, thinking there might be a small air leak in the casting. But this did not improve matters. We then took it out, tested it, dipped it in pitch and from all appearances it seemed to be air-tight, but we received no better results.

The head has to be drained every day or every other day, and all is well. But as soon as it fills again, it begins to thump and will not give water. Of late we have put in an air valve on top of the head to make it easier to drain, but we would like an effectual remedy, if possible.

Newton, Iowa. F. G.

According to F. G's letter, we surmise that his trouble is due to the air chamber on top of ram losing its air.

This seems evident for he says that the ram works well for some time after air-chamber has been re-charged with air.

Just how the air escapes from the chamber is the problem, which, when understood, can easily be remedied.

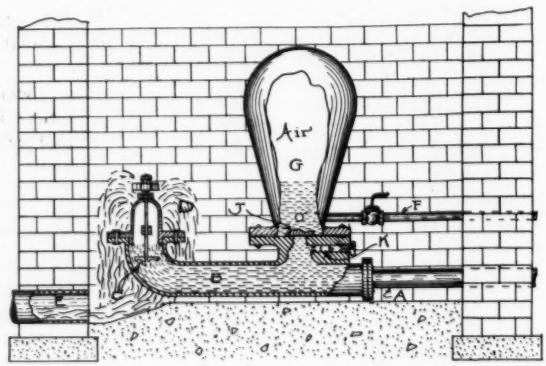


Fig. 1.

And to understand it thoroughly, we must consider a certain physical property possessed by water, which operates to remove the air from a perfectly air-tight chamber.

Water absorbs air. It will absorb as much air when subject to atmospheric pressure as when standing in an open reservoir. But it is capable of absorbing a great deal more air when it is under pressure.

This property of water is very pronounced when the cock of a seltzer bottle is opened. The pressure of the gas in the bottle pushes water out of the bottle, and as the pressure is reduced inside we can easily see the gas bubbles.

They are, however, most pronounced in the tumbler which receives the seltzer water. Here the pressure is taken off the water entirely, and gas bubbles are released from it quite freely. That gas was pushed into the water by pressure. The water simply absorbed it. The greater the pressure the more gas will be absorbed by the water. The same phenomenon applies to a hydraulic ram. In the reservoir the water probably absorbed all the air it could hold there, but when it is put under the back pressure of the ram discharge pipe, it readily absorbs the air from the air-chamber.

That is one way by which an air-chamber can lose its air. Another way is by actual leakage, as Mr. F. G. suspected, which may or may not exist in his air-chamber.

Now, to overcome the first trouble, which is incidental to all hydraulic rams depending upon air cushions, the ram manufacturers usually provide a small valve on each ram called a snifter valve. It is just a small check valve attached to inlet of ram in such a manner that it will be closed when water is rushing down through drive pipe to ram but instantly opens when the shock comes on ram. At this instant there is a recoil of water in drive pipe, which for the instant causes a partial vacuum in ram body below air chamber check valve. This vacuum pressure allows atmospheric air to rush in to ram chamber through the snifter valve.

If snifter valve is properly located, this air will gravitate up to under side of check valve under air chamber and be pushed into air chamber automatically with the next shock of ram.

Every recoil draws in a little air, and every bubble of air so drawn in should go to replenish the air chamber.

This then is the theory of the automatic re-filling of a ram air-chamber. And it is up to Mr. F. G. to examine the snifter valve and see if it works right. He should hear it sniff in air every time the ram strikes. We think this is where his trouble lies.

Fig. 1 is a sectional view through the working parts of a hydraulic ram. Water rushes down drive pipe A, through ram body B, up around valve C which is loaded to suit head of driving water; then out into the ram pit, as shown at D, the water running to waste through drain E.

When velocity of flow becomes accelerated enough to lift valve C, this valve closes suddenly, causing a shock or water hammer in body B. This for the instant increases the pressure in B greater than back pressure of discharge pipe F, which connects to base of air chamber G.

Some water, therefore, flows up into air chamber G through check valve J, which closes the instant that pressure B falls below that in G.

Then comes a recoil of water in drive pipe, which sucks open the snifter valve K and lets a little air rush into chamber B. Valve C also falls open with the recoil. But the bubble of air entering through snifter valve rises and hangs around under check valve J. It is then pushed up and into chamber G when the next shock comes.

As soon as the water pressure returns in B, that is, immediately after the recoil, the snifter valve is pushed to its seat to prevent water waste there, and to allow full force of shock to apply under valve J. This is the action of the ram, and it is evident that if snifter valve is working freely, enough air can get into G to automatically keep it always charged.

CROSS-CONNECTING TWO SECTIONAL HEATING BOILERS.

Editor "Domestic Engineering"—I have two cast iron sectional boilers to cross-connect. Each boiler is

rated at 5,000 sq. ft. and has three 5-inch steam outlets. The return tappings (two to each boiler) are 4 inches in size and are located on either side of the boiler in the second section from the rear. The job requires two 5-inch steam mains and two 3-inch returns. Please advise me of the best method to use to cross-connect these boilers so that either boiler may be used independent of the other.

St. Louis, Mo. Henry Smith.

In planning to cross-connect two boilers it is well to be generous in the size of connections used. For two boilers of the size indicated, supplying two 5-inch mains, a 7-inch steam header should be used and all three of the steam openings of each boiler should connect into it. We believe the drop header style of connection is

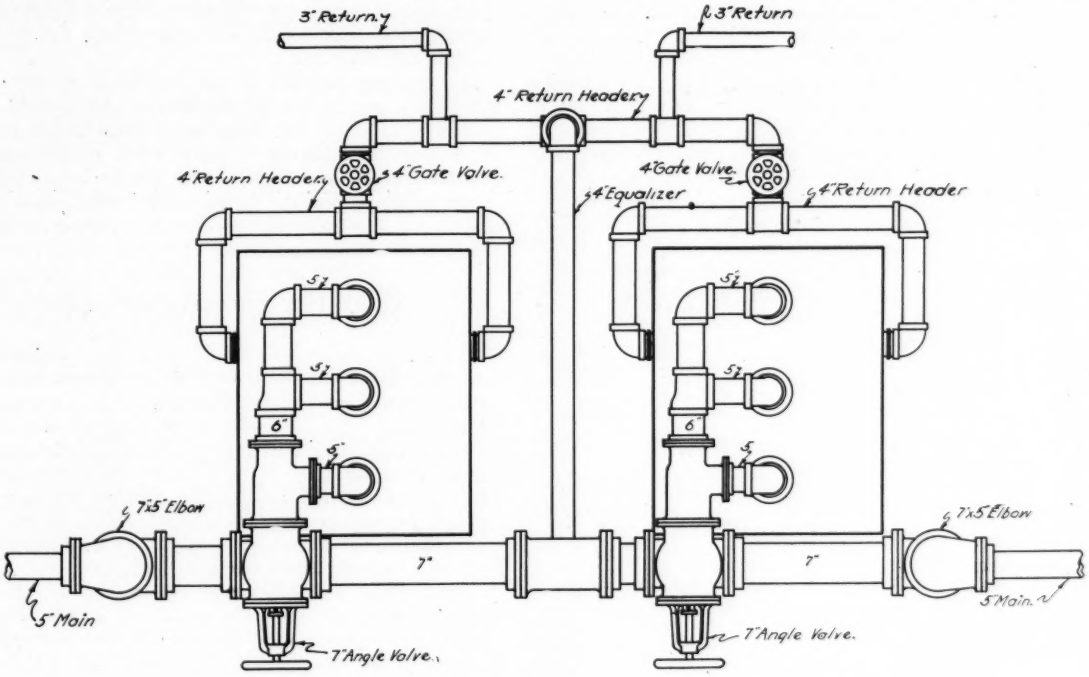


Fig. 1.

most serviceable. This method requires only a single steam valve for each boiler where connection is made to the header. To supply two 5-inch mains a 7-inch header is not too large.

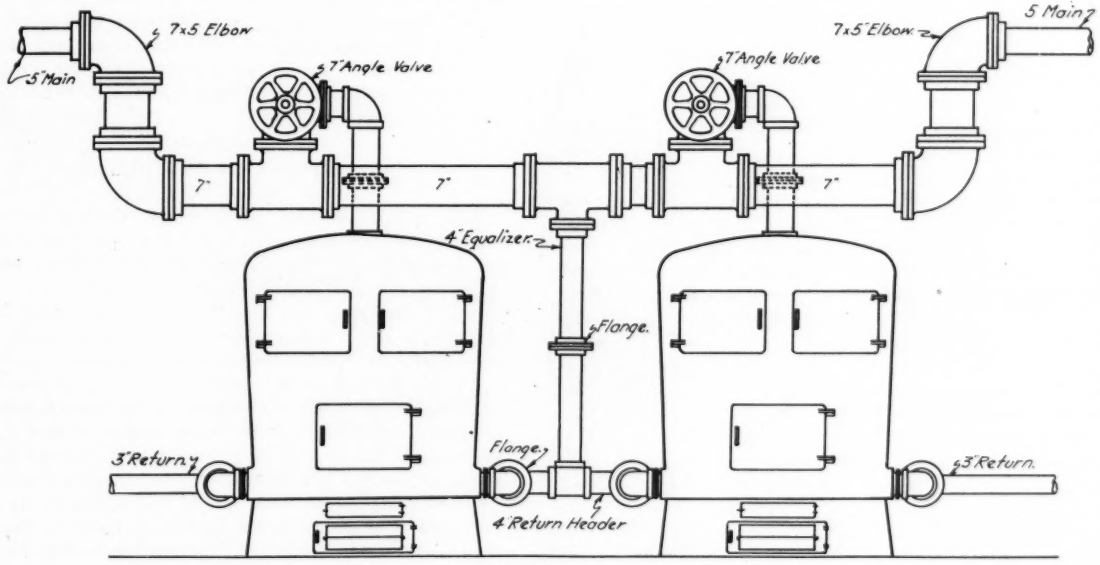


Fig. 2.

Fig. 1 shows a plan of the method advocated and illustrates the style of header connections. All fittings above 6 inches are flanged and those under 6 inches in size are screwed. A 4-inch return header is constructed for each

boiler, and these are joined by a universal 4-inch header. Note that a 4-inch equalizing pipe connects the steam header with the return header. This pipe serves to equalize the pressure between each boiler and the return, and also acts as a drip for any water carried into the header with the steam from the boilers.

An elevation of the boilers is shown by Fig. 2, which possibly more clearly indicates the method of making the connections and their appearance. Note that each of the 3-inch mains are taken from the header with swing joints, and reducing elbows are used in making the connections.

If correspondent follows the plan outlined above, which is clearly indicated by the sketches given, he will have an effective and neat appearing installation.

THE DIFFERENCE BETWEEN "MECHANICAL" AND "NATURAL" VACUUM SYSTEMS.

Editor "Domestic Engineering":—Will you inform me, if there is any difference in a "mechanical" vacuum system and a "natural" vacuum system?

My understanding of the term "vacuum," as used or applied to heating systems, is a system which is free from air or atmospheric pressure.

Can you advise me why there is so great a difference in the amount of radiation required, when various rules are used in estimating the requirements for any certain building?

Also, I am able to estimate quite accurately for steam, but would like to know the requirements for vacuum and vapor heating.

Philadelphia. G. Y. C.

We consider vacuum systems as being of two kinds, "natural" and "mechanical." There is no difference in the kind of vacuum produced in either system. It is simply a method of denoting the means used to produce the vacuum.

A natural vacuum in a heating system is obtained by the condensation of steam in a system which is made air tight to prevent air leakage into it, which, should it occur, would destroy the vacuum so produced.

Correspondent is no doubt familiar with the fact that one cubic inch of water, when converted into steam occupies a space of 1,700 cubic inches. When this volume of steam is condensed in a vessel which is air tight there will be one cubic inch of water and 1,699 cubic inches of space which is void of matter or under a vacuum; therefore, in a heating system if these conditions prevail and the piping, stuffing boxes of valves, etc., are absolutely tight the vacuum produced by the condensation of the steam will hold for a considerable time.

In a mechanical vacuum system the vacuum is produced by suction on the return lines. A pump or other mechanical device is used which sucks the air from the heating system.

Correspondent's understanding of the term is correct as a vacuum is in every sense a space void of matter. It may be well to state that a vacuum is measured by the suction or pull it creates and is usually measured with mercury. If one end of a tube was connected to a receptacle under a complete vacuum and the opposite end inserted in a pot of mercury the suction would pull the mercury 29.92 inches up the tube and we would speak of the result as having 29.92 inches of vacuum. As a matter of fact a complete vacuum is never attained in a heating system. Usually eight to ten inches of vacuum is ample for all requirements and less than this amount is more frequently used.

There are many rules for estimating the amount of radiation required to warm a building, and rules which consider all of the cooling surfaces usually give practically the same results. Do not make use of any rule which does not consider the exposure of a building—the exposed glass surface, exposed wall surface, size of room (cubical contents), etc.

The diversity of rules is very confusing to the steam fitter. No rule covers all conditions. Allowances must always be made for the character of construction and for the position of each room as to points of the compass and for climatic conditions or the geographical location of the building. Vacuum heating requires the same radiation as for low-pressure steam, and vapor about 20 per cent more radiating surface.

ALLOYING CAPACITY OF LEAD.

German investigators have found that the alloying capacity of lead can be considerably increased by adding to it a suitable proportion of cadmium. If, to a quantity of pure lead there is added from 8 to 10 per cent of cadmium and these two metals are fused together, and to the resulting alloy there is then added from 8 to 10 per cent or slightly more, either of pure manganese or of high percentage ferro-manganese in the molten state, the whole mass being constantly stirred, there will be formed a uniform alloy which is distinguished by all the properties that are a characteristic feature of the well-known, high-grade tin white metals. It is generally possible in this manner to effect the complete absorption of the manganese by the alloy in the course of a single operation.

Attention must be directed to the fact that when molten ferro-manganese is employed, little or no carbon will be separated out, and that both the manganese carbides and the metallic manganese will be dissolved in the other metals forming the alloys, the influence exerted by the carbides being limited to the fact that their presence imparts a greater degree of hardness to the resulting metallic alloys than would be the case were manganese free from carbon employed.

WHY WATER PIPES BURST.

When closing a water faucet a dull thud is frequently heard in the adjoining pipe, but few people give the matter any attention. This sound, however, has a decided significance, for it tells of a severe pressure and strain put upon the pipe, which is liable to be ruptured unless it is very strong. When a faucet is opened the water flowing through the pipe acquires a considerable momentum, and if the valve is closed suddenly this momentum reacts on the pipe, its force depending on the normal pressure and the speed with which the water flows. With a normal pressure of 125 pounds in the main, and only 20 pounds at the faucet, a pressure of 550 pounds has been encountered in the pipe immediately behind the faucet when the latter is suddenly closed, and the pressure in the main increased to 220 pounds. Under such conditions it is little wonder that the pipe bursts. This can be easily avoided if the faucet is closed slowly, thus gradually reducing the speed of flow in the pipe.—"Scientific American."

Muscatine, Iowa.—W. H. Crozer has organized the Crozer Plumbing & Heating Co., and opened a modern establishment at 417-419 East Second Street.

An Efficient Time-Keeping System

A System Which Has Proved Very Convenient in an Eastern Plumbing and Heating Establishment

By WILLIAM A. BRADFORD

VARIOUS METHODS of keeping track of time are in use among master plumbers and fitters. Some of these methods are praiseworthy and some are not. At times people become very enthusiastic about what we should do with our bills, but when we show them that all the charges for the time and stock were made wholly by the mechanic, it certainly puts a damper on their ardor.

In our plumbing and heating business we use two sheets for this work, a black and a green. My experience has been that stock and time should not be confused or charged on the same sheet, although recently we have added to the green time sheet some of the very small items used in jobbing. Our procedure is as follows:

Form No. 12

MECHANIC'S RECORD OF TIME

Mr. *19*

FOR THE W. A. BRADFORD CO.
PLUMBING, HEATING & GAS FITTING

W. A. BRADFORD, PROP. No. 5 Maple Street

On the above date I was employed on the following work:

M	7:30 A. M.
M	8:00 A. M.
M	8:30 A. M.
M	9:00 A. M.
M	9:30 A. M.
M	10:00 A. M.
M	10:30 A. M.
M	11:00 A. M.
M	11:30 A. M.
M	12:00 M.
M	1:00 P. M.
M	1:30 P. M.
M	2:00 P. M.
M	2:30 P. M.
M	3:00 P. M.
M	3:30 P. M.
M	4:00 P. M.
M	4:30 P. M.

EXTRA TIME

I worked on the following job:

M .....from.....to.....

Fig. 1—Size 5½x8¼ Inches.

The black sheet (Fig. 1) carries the name of the mechanic. The various lines on the sheet are for his entire day's work, or a recapitulation of the day's work, with a memo for extra time on any particular job. The green sheet (Fig. 2) contains all of the detail and items of each of the jobs, that he was engaged on during any particular day. For instance, the mechanic's name goes at the top of the sheet, and he was working for John Doe, as should be noted on the sheet, where it says "On above date I was employed on the following work."

The symbol "No H" means "no helper," and "W. H." "with helper." The idea of "shop time" below is that very often, in filling in a day, we give them some small job in

Form No. 13

A separate one of these Green Sheets to be filled with the Stock Sheet for each separate job

MECHANIC'S RECORD OF TIME

Mr. *19*

FOR THE W. A. BRADFORD CO.
PLUMBING, HEATING & GAS FITTING

W. A. BRADFORD, PROP. No. 5 Maple Street Order No.

On the above date I was employed on the following work:

M ..... } No. H.....
Job Located at..... } W. H.....
Owner's Address.....

SHOP ..... } No. H.....
..... } W. H.....

C. E. O. J. B. MEMO Box P. H. G.

EXTRA TIME

I worked on this job: Extra Time in addition to the above

From.....M. To.....M.

Is Job Completed?.....	Car Fare.....	Carriage Fare.....
Was Stock used?.....	Freight.....	Telephone.....
Was Laborer Employed?..	Auto Service.....	
Was carpenters employed?..... Mark Yes or No.	Baggage Express.....	
	Regular Express.....	
Bibb Screws.....	Putty.....	Tank Balls.....
" Washers.....	Leather.....	Solder.....
" Top Washers.....	Gasoline.....	Sink Bolts.....
Fuller Balls.....	Wicking.....	Stove " .....
" Cap and Nut.....	Rubber Packing.....	Brass Screws.....
Ball Cock Core.....	Rubber Valve Washer.....	Iron " .....
Ball Cock Float.....	Leather " "	Sundries.....

Fig. 2—Size 5½x8¼ Inches.

the shop or it can be used to designate unproductive labor. For instance, a helper may be cleaning the shop windows, in which case his time would go on the green sheet, under shop. We keep this time all together, and at the end of the year we are able to tell exactly what this costs us. The symbols or letters below are purely the bookkeeper's property and simply refer to his manner of filing the sheets and keeping track of the work. For instance, "E" is extra, "C" is contract, "O" is original, "J" is journal or day work and "B" is box for contracts, or, in other words,

instead of carrying all of this mess of sheets through a journal or contract book each day, we store them in small cartons or paste board boxes, and then make a recapitulation of the whole job.

The green sheet also contains a clause for extra time, together with a few questions which we ask and which, fortunately they generally answer. For instance—"Is Job Completed?" under which the mechanic marks "yes" or "no." Then there is the question—"Was Stock Used?" If it is not marked down in the small items on this sheet, we know there are stock sheets. The car fares the mechanics pay from their own pockets, and we reimburse them as fast as they desire. In fact, we keep a credit and debit sheet for them and straighten these matters out on Saturday, when they receive their pay. They are also able to tell us whether they called in a carpenter or laborer, as they very often do from some other part of the job and employ his services for some small work. The number of green sheets must check with the number of charges on the black sheet, or they don't get their money. In other words, if they were on four jobs during the day there must be four charges on the black sheet and four green sheets to correspond with the black sheets to make their eight hours.

We have a time sheet which is printed in brown type and is a duplicate of Fig. 2 or the green one. It is used for extra work so that we may distinguish the difference between contract and day work on the same job. Ordinarily we use the green sheet for both, but when a man is engaged on a contract job and extra time is started, the minute he begins to employ his time or stock on extra work, he changes the color of his time sheet, but the recapitulation on the black sheet goes along just the same.

We have an auto-time sheet which is printed in red type, and which is made out by the man who drives our auto truck. The sheet indicates whether the load hauled was for the plumbing, heating, gas or sheet metal department also whether the driver was taking the stock to or from the job—or the mechanic to or from the job, all of which we try to get paid for in a neat little manner peculiar to ourselves. This auto-time sheet has proved of direct benfit to us. For instance, we employ a driver, who receives wages which total annually $624. Last year he brought in or earned for us an amount equal to $345.55. Thus the net annual cost to us of employing the driver was only $278.45.

This red sheet also contains the usual shop clause so that we are able to separate the actual expense to us.

System in office and shop practice is indispensable. Without it the acquisition of profit is apt to be largely a matter of conjecture.

These time sheets are but a part of the modern bookkeeping system which should be in use in every plumbing and heating establishment.

COATING WITH ALUMINUM.

A new process of coating iron with aluminum is said to produce a surface equal to that of regular rolled aluminum sheets. The iron article to be coated is first galvanized or tinned and is then immersed in molten aluminum at about 700 to 800 deg. C. During this immersion the surface is swept by steel brushes. The tin or zinc then passes into the molten aluminum while the aluminum replaces the tin or zinc on the iron surface. The article is then treated in two or more such aluminum baths, but the greater part of the tin or zinc is kept in the first bath.

The aluminum adheres so well to the surface of the iron, that it is claimed that it will not come off, tarnish, nor corrode.

HARMFUL WORKING POSTURES.

Numerous departures from the normal posture appear in every degree from a very slight and almost imperceptible curvature to a marked deformity and produce corresponding deviations from normal health, in many shop and office workers. It is therefore of great importance that every effort be made to prevent the establishment of such conditions, or if once established to correct them. With this in view every employer should endeavor to obtain the best possible working conditions for his employes—suitable seats, proper desks or work benches, sufficient light falling upon the work at the correct angle and frequent change of position in work requiring close application.

This alone is, however, not sufficient, for unless the workman can be made to realize the necessity for correct posture he will be benefited very little. In most establishments little more can be done than simply to call attention of all workers to the dangers consequent upon the assumption of incorrect postures, adding to the conditions noted above, the ever-increasing susceptibility of the individual to tuberculosis as the supply of fresh air reaching the lungs is diminished.

Definite instruction, continues the "Monthly Bulletin," of the Pennsylvania Department of Labor and Industry, to bend the body at the waist instead of at the shoulders in work requiring close application, will, if followed out, not only eliminate the hump on the back, but will surprisingly diminish fatigue.

Regardless of what method is pursued in dealing with this important question, two facts should always be borne in mind: One is that a deformity prevented is very much more to be desired than one corrected; and the other is that the sooner a deformity is detected, the easier it is to be corrected and the less serious are the results wrought by it on the individual.

BRITANNIA METAL SOLDER.

A flux for soldering Britannia metal is composed of olive oil, 500 grammes, and tallow, 400 grammes. Melt and slowly stir in 250 grammes of powdered resin and bring the mixture just to a boil. Allow the mixture to cool, then stir in 125 grammes of a saturated solution of sal ammoniac. This flux should not be used except when it is cold.

PLUMBERS AND STEAMFITTERS WANTED FOR OVERSEA SERVICE.

Plumbers and steamfitters are wanted for early service overseas. The men in the front line trench need the help and co-operation of skilled men back of the lines, and plumbers and steamfitters are wanted at once for the Enlisted Ordnance Corps, National Army.

Uncle Sam is calling on our trade to come across and help his fighting men. There is a lot of work to be done over there, and the call has gone out for plumbers and steamfitters, between the ages of 18 and 40, who want to do their bit, and who know their job.

Modern war is a tremendous business, and the army that wins, is the army which has the best equipment and the best men. The men are over there now—they are ready to go ahead, but they still need experts in our line to repair and maintain their equipment. There is a fine chance for every man who wants to help. Write to the Chief of Ordnance, War Department, Washington, D. C., for particulars.

A Plumber's Thanksgiving

A Sincere Thanksgiving of a German-American Master Plumber Whose Sons Are in the Service

By GEO. H. FISHER

"HEY, Dad—Hurry! Hurry! Mother's got a letter from camp. Bill and Jim will both be home for Thanksgiving." That was the joyful news that greeted Dad when he got home with his auto truck after a hard day's work out on a farm, where he had been busy all day installing a modern water supply system. The bearer of the glad message was his twelve-year-old hopeful, the youngest of a good-sized family. He jumped in over the tail board as the truck passed on its way to the barn.

"So Bill and Jim are both coming home for Thanksgiving, eh?" repeated the old gentleman, as he ran the car into the barn and embraced the boy before jumping out.

"Yes—mother says they've got a 'furlum,' and I guess they're coming in it. What kind of a car is that, Dad?"

"What?"

"A Furlum car."

"Tut, sonny, there's no such car. You mean furlough."

"That's the one, Dad," exclaimed the youth. "Is it like a Ford?"

At this moment mother came running into the barn, waving a letter, on which was quite clear the red triangle of the Y. M. C. A.

"The boys are coming home tomorrow on a 24-hour furlough. Isn't that grand?" she cried, as she planted that beautiful token of affection on Daddy's cheek, the mother's kiss.

"What's the matter with you, Johnny?" asked mother, as she noticed a sober, thoughtful expression come over the lad's countenance, "aren't you glad brothers are coming tomorrow, even if its only on a 24-hour furlough?"

"Oh, sure, I'm glad they're coming. I'm just wondering what kind of a machine they've got. I never heard of a 24-hour Furlum, and it sticks me to know what 24 hours have to do with it, anyway. Can't the machine run longer?"

But Johnny's request for information was unanswered in the excitement of preparation for the home-coming.

Hoover was entirely forgotten for the time being. A great gobbler was purchased at once, along with all the fixings and other things that have been renowned for ages on American Thanksgiving tables. Everything was procured that would make the Thanksgiving dinner the most sumptuous of the season, for it was well known to both parents that their boys would soon go "over there," and this might be their last time together. But that it should

"Hey, Dad—Hurry! Hurry! Mother's got a Letter from Camp. Bill and Jim will both be home for Thanksgiving."

happen on Thanksgiving day seemed almost a heart-breaking mockery.

How could they be thankful on such an occasion? Both father and mother German-Americans—their two American born sons in armor to fight against their father's fatherland, and their last meal together, perhaps, till Germany is defeated. Oh, isn't such a Thanksgiving in such a family under such conditions, a mockery?

The good wife was too busy with the viands to see the situation beyond the mother's heart, that goes out in sympathy for her boys, and the mother's eyes, that are dimmed with tears as she realized their danger.

But the father had time to think. When war broke out he was strictly, and very naturally pro-German. Then he tried to be neutral, or as neutral as a German could be, for our country was neutral, and he was a citizen. When we entered the war on the Allies' side he felt it keenly, but said nothing. Being an American citizen and having waived all allegiance to the Emperor of Germany, also having sworn allegiance to the land of his adoption—yes, on the Bible, as proof of his sincerity, he did his best to go along with his new country in her great war scheme.

It was hard—very hard—for him to approve the U. S. A. plans for war. While he knew he liked the United States better than Germany as a place to live in, still he had loveties to the fatherland. Being a man of sensitive nature, and honest, he experienced the fight of his life. It was a fight between head and heart—a fight he had to endure alone—a fight unseen by the world, but indescribable in ferocity, a fight that aged him and made him thin. It was a fight between love and duty—love for his own fatherland, duty to the fatherland of his family.

In the result of that secret fight his destiny depended.

If love vanquished duty, he became a traitor to the country that opened its arms widely, embraced him, nurtured him, and protected him and his whole family in a most generous manner.

If duty won the conflict he would have to support the country that received him so kindly, allowed him all the liberties of its own sons, that permitted him to accumulate money, buy land and build a home—yes, that fed and educated his family—that verily received him unto its bosom and made him one with its own people.

Day by day at his labors, and night by night, in his dreams, the battle between love and duty continued, and pulled him down physically, and the victory was not yet.

But this evening before Thanksgiving he sat down in a dark corner of the barn alone to fight the big fight to a finish.

He thought of his boyhood days in Germany, how happy they were. He thought of his father and mother buried there. He thought of his leaving that country and arriving in America some 30 years ago, a poor foreign immigrant. He remembered the rough passage and Castle Garden, and the trials of his first years in America. All these things were in favor of the German side of his soul's fight. And if he had been interrupted at this point, he might have finished up pro-German to the end.

But, nobody stopped the fight. He was alone, and it went on. Continuing his life's history, he followed his career in America. He remembered how the American people were good to him. He realized how they made no distinction between him, a poor foreign immigrant, and their own sons. He realized how they trusted him, gave him work to do and paid him well for it. He remembered how they welcomed him in their homes, their churches, and their secret lodges. Nothing was too good for him. He remembered sending money across to Germany to bring his school day sweetheart across the ocean to become his wife. His mind dwelt on their early struggles to create a home for their little American born brood. He thought of the great success which attended his business venture as a master plumber, which was all due to the confidence and generosity of the American people. And, finally, he thought of his own sons, who had voluntarily joined the fighting forces of his adopted country, because they loved their country and were willing to fight for it and lay down their lives for it, if necessary.

"My country," they said, as they decided to enlist—"My country—right or wrong—it's my country, Dad, and I'll fight for it."

The words "My Country" rung in his ears with ominous thuds. "My country," he murmured—"My country—yes, it's my boys' country, and they are right. But is it my country, too? Ah, if I could only say that, and mean it, I would be happy again."

Then something came to his relief. It was plain hard-headed German-American reasoning. "Let me see," he said, "perhaps this really is my country, too. I will suppose it is not, then what? Well, some other country must be mine, for every man must have a country. If America is not my country, what is? Is it Germany, eh, what? Can I go back to Germany and say: My country. I cannot Why? I deserted her for American money and American liberty. I deserted her and her Kaiser, when my parents were alive and warm and kind, and I did that before I knew the love of America. Can I go back now, when my parents are dead and cold, and claim Germany as my country? No. Impossible.

Then if Germany is not my country, where is it? The scales fell off his eyes. The true light shone forth. Up he jumped with determination stamped all over his face. The cloud of doubt vanished. Full, hearty manhood returned as to a converted sinner: "My country," he exclaimed aloud, "I've found you. My boys' country is my country, too."

The khaki clad boys arrived Thanksgiving forenoon. It was a warn reception they received. Nothing was too good for them that day. And they were more than delighted to see Dad warm up to the uniform.

But when blessing was asked at that Thanksgiving table they were overjoyed. Before inserting the knife in the steaming, savory turkey before them, he bowed his head solemnly and sincerely, and said aloud:

"Oh, Lord, we thank thee for all the good gifts thou has bestowed upon us and our beloved country. We thank thee for the abundant harvest. Enable us to use it, not only for our own sustenance, but also for the sustenance of the poor war-stricken nations of the earth. We thank thee for the privilege of living in a land that is not devastated by the ravages of war. And in these days of strife, when nearly the whole world is fighting against the autocratic ruler of my fatherland for the perpetuation of government of the people, by the people and for the people, we thank thee for the courage and power of the free peoples. And we thank thee that the United States, the first and greatest free nation of the world, the leader of human liberty, and democracy, has entered into the fight. We thank thee, oh, Lord, that our cause is just, and, while we do not want to see the German people suffer any more than is necessary, we pray for success to the armies of liberty. Hasten a decisive victory that will overthrow Kaiserdom and autocratic Prussianism and make the German people a free people, even as we are here in America. And, Lord, we thank thee that this house is able to put its quota in service in the form of our two sons. Give them health and strength for the campaign, and if it be thy will bring them back safe to us. Amen!"

"Amen!" murmured each boy in khaki.

"Amen!" sobbed the brave mother.

Short Talks

By W. W. HUGHES

THE AMATEUR FITTER.

IT was on a Monday morning in the middle of October. William Hopkins, master plumber and fitter, had arrived at his place of business bright and early, had glanced through the jobbing file, the better to place his crew, when they should arrive and was reading the morning paper, when the telephone bell rang.

There was little question as to who was at the other end of the line. It was a lady of decidedly Irish parentage, and she was in deep, dire trouble.

The long and the short of the matter was that the heating boiler in a house, which she owned, was leaking. They were without heat. It was decidedly cold, snow was falling, the tenants had some small children and they were freezing. She not only wanted a repair man in a hurry, but she almost made Bill think that she was a believer in thought transmission, and that he should have a man on the job even before she called up.

He assured her, however, that the first man into the shop would be sent right over to her house, and that the trouble would be remedied in jig time.

A few minutes later one of the fitters arrived and Bill dispatched him to Mrs. Kelly's. Arriving there, he found that there was a section of the hot water heating boiler broken. He telephoned back to the office and explained to Bill exactly what was broken. Bill telephoned the supply house and found that the section, which they needed, would have to come from the factory. Accordingly, it was decided that the best thing to do would be to order the section and to make a temporary repair by putting in a blind gasket of rainbow packing and sheet iron between the broken section and the water leg.

While the fitter was doing this work, Mrs. Kelly arrived at the job and proceeded to shed a little light on an otherwise dark subject: "I cannot, for the life of me, understand why that boiler had to break at just this time. Sure and we have been using it for better than fifteen years now without one single bit of trouble at all. Mr. Plumber, what made that boiler break?" And Mr. Plumber replied that it was beyond him.

And then Mrs. Kelly continued: "You see, Mr. Plumber, on Saturday the tenant called me up and said that there was a leak in the tank in the bath room, and so I came down to see what it might be, and sure it was in that little tank that belongs with the heating plant and so I called in Mr. Riley, who lives just across the street. You know, he isn't a plumber, but he is a nice handy man with machinery, him working in the big flour mills, you know. And so he came over and looked at the tank and then he got a step ladder and looked inside of it and he told me that he would put in a little plug and fix the tank in a jiffy, and he fixed it and it hasn't leaked a bit since. But Sunday it got kind of cold, and the tenant built up a little fire and pretty soon he noticed water running down into the fire, and then he called me on the telephone.

"And so I waited until this morning and called up Mr. Hopkins bright and early, so as to get this fixed up, because, if I don't, the tenants say that they will have to move out."

And with a final: "I can't see what made that boiler break," Mrs. Kelly left the fitter at his arduous task.

As soon as he had finished putting in the blind gasket, the fitter opened the feed valve and let the water run into the boiler. While the plant was slowly filling, he went up to the bath room and looked into the expansion tank to see what kind of a repair Mr. Riley, the handy man about machinery, had made. He found it. The inlet to the tank was through a wrought iron coupling, which had been soldered into the bottom of the tank and reinforced with a bossing of galvanized iron. Mr. Riley had screwed an iron pipe plug into that opening. He had surely fixed the tank so that it would not leak. Without knowing it, he had also made a pressure system of the plant and had not provided a means to care for the expansion.

The result was a broken boiler section together with the cost of installing same and also a new expansion tank.

THE AMATEUR PLUMBER.

HE came into the store a few days ago with a broad smile on his face, which soon ripened into a gale of hearty laughter. He seated himself in one of the big arm chairs in the office and, when the opportunity offered, I asked him regarding the why and wherefore of all the merriment.

And his reply was about as follows: "You know, Bill, when I was in here a week ago, I told you that the ball valve in one of the closet tanks at home was leaking, and you told me that I had better call a plumber. And then I told you that I was going to beat the plumber to it this time, anyhow, by doing that little job myself. And you laughed at me, but finally you gave me a couple of ball valve gaskets and told me to go to it. I did.

"I went home. Ate a nice dinner. Read the paper. Removed my coat and vest. Rolled up my sleeves. Had the wife bring the pliers and a screw driver and then I sallied forth to beat the plumber's game.

"Very carefully I removed the cover from the closet tank and with pliers and screw driver I removed a half dozen or more little bolts at the top of the ball valve. Until this time I have always been under the impression that the water pressure in this city is very low, something like 40 or 50 pounds, but now I know that somebody left off one cipher from those figures, because when I removed the last bothersome screw. Bing! Water is worth 8 cents per thousand gallons here, and I bought about 16 cents worth and had it delivered f. o. b. mostly down the back of my neck. Of course, it gave everything in the bath room the once over, including yours truly, before I finally got my thumb over the hole and stopped that young Niagara.

"Like the man in the comic section of the Sunday paper, who is always getting in bad and yelling for 'Min,' I put in an S. O. S. for friend wife. She came, she saw and almost wilted, but I persuaded her to use her thumb for a stopper for a minute during which time I beat it for the basement, located the shut-off valve, turned off the water, and then sheepishly returned to the second floor.

"Friend wife immediately proceeded to tell me how many kinds of a darn chump I was, and I appreciated the

truth of her remarks to such an extent that I sat right down and laughed till the tears came.

"Anyhow I saved the expense of a plumber's bill, with the possible exception that I spoiled about 50 cents worth of tooth powder and shaving powder, spoiled a beautiful pressing that the tailor had just given my trousers, put the rest of my clothing, the bath room rug and three or four towels in the laundry a little ahead of time, and if I have good luck, the wet spots in the dining room ceiling just below the bath room will dry out without leaving any reminders, but, if they don't, it will mean new paper for that room.

"Oh, yes, the wife felt that it was a good time to make a touch, so she is picking out a new suit today.

"Take it from me, this 'every man his own plumber' is henceforth ancient history out at our house."

WHAT THE FUTURE OF THE PLUMBING TRADE HOLDS.

By R. E. Dockham.

IT IS interesting, sometimes, in the light of past events and in the knowledge of the present, to speculate somewhat about the future. It is also a source of continual entertainment, to even a casual student of human nature, to talk with a man, here and there, and to observe how the habitual peculiarities of thought and influences of environment crop out in a man's conversation. How the healthy, happy man views the future with confidence and hope and the more unfortunate dyspeptic fellow can see the future only through eyes, blurred by his physical condition.

Again, what wonders can be wrought in our view of things present and future, by a few hundred dollars. Perhaps this scene may be somewhat familiar.

The morning comes dull and gray, you arrive at your office to take up your work. Obligations to meet, collections poor, business bad, the present very dull and the future looking worse, conditions doubtful and growing more so, and presto: Enter the mail carrier, envelope No. 1, invoice. No. 2, letter asking for check. No. 3, demand for payment. No. 4, check. Well, say, this isn't such a bad morning after all. Business is looking up and the future looks a bit more promising, and all because of a check. Well, after all, we're human and our minds chameleon-like, reflect the color of our surroundings.

It's well to keep this in mind, as you listen to conversations dealing with the future of the trade.

What does the future hold for the plumbing business? Slowly but surely the business is changing. Not many years ago a man's excellence as a plumber was determined by his skill in the use of lead and solder, in their relation to the sanitary equipment of buildings. There were traps and pipes to be made all of sheet lead, mammoth cisterns to be lined, with their seams and points, all wiped in place. Lead supply pipes to be run, straight as gun barrels, joints to be wiped so skillfully that calipers would scarcely show aught but regularity of contour.

Later came the mechanic, so skillful in his ability to manipulate brass that his bends and fanciful designs still look like machine formed work. This is all passing to such an extent, that the writer has recently installed some fair-sized systems of plumbing, having the regular number of water closets, lavatories, urinals, sinks and wash trays, where not one single wiped joint was necessary.

Hand work is being reduced to a minimum, in fact, a careful search through records of the past eighteen years has shown that the number of days required to install the plumbing in the average building has steadily decreased.

We are fast becoming assemblers of material and factory-made appliances. How long has it been since you were called to renew a worn-out lead water closet bend or pot trap? And—what did you put in place of the old one? How did your purchases of wiping solder for the last twelve months compare with a like period some ten years ago?

Furthermore into great popularity have come the vitreous china and the enameled iron and steel water closet tank. When do you expect to be obliged to reline or replace one?

The fact is, and we as plumbers are forced to admit it, that the new methods are producing more durable systems of plumbing and drainage and in the long run more satisfactory work for the customer. It almost seems that directly, as our skill as hand workmen has declined, has the durability of our work improved.

Mark this also: Before the present high prices of plumbing material were the order of the day, the cost of plumbing work, in new buildings, notwithstanding the continued advance in the cost of labor, has remained practically the same for a period of some twenty years. I refer to the so-called contract work.

This is rather a significant fact, but true, nevertheless, as a careful reference to your old estimate sheets will prove. It is also strange to note that this fact is not so universally true of any of the other building trades.

Yes, the business is changing, trade customs, methods of installation of materials, the attitude of the public and our own ambitions. We want to know things, to be recognized as real men of a real business, successful men, who play a part in the general progress of the world.

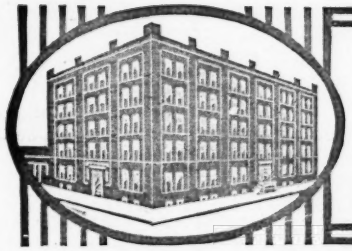
Said a friend and brother plumber (mark that: Friend and brother plumber, that is a condition of society hard to find years ago), said he, after listening to an interesting talk by a veteran of the business: "Well, it's very instructive to listen to lectures dealing with the practical side of the business, but what we master plumbers need most is instruction in the art of successful business methods." Who ever heard of a plumber being responsible for such a statement some years back?

What does the future hold?

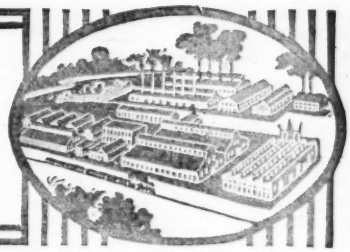
Fear not for the future of this good old trade, my pessimistic friend. There will always be plumbing and more plumbing done. Methods change and men come and go, but this business is going to live on, as long as mankind needs homes, in which to live, and buildings, wherein business shall be conducted. It is going to be conducted by bright, keen, successful men who will have as a part of their completed trade a rounded business education. And we, who are blazing the trail to better business methods, are but playing the part of all men who live in a period of transition from poor to better conditions. We are doing our best, knowing that the coming generation will build on the foundation we are laying, a structure of business efficiency worthy of a craft, whose importance in relation to the health and comfort of mankind stands unchallenged amongst the building trades.

Salina, Kansas.—Creditors have filed a petition in bankruptcy against the Sanitary Plumbing Co., of this city. Charles T. Stack is at the head of this company.

Detroit, Mich.—Samuel A. Agree, doing a plumbing and heating business under the name of Agree Bros., has filed a voluntary petition in bankruptcy, scheduling his liabilities at $18,830.97 and his assets at $22,042.74.



Among the Wholesalers and Manufacturers



COMPANIES RECENTLY INCORPORATED.

The Ceco System, of Clarksdale, Miss., has been incorporated with a capital of $100,000, to manufacture heating systems.

The Keyser Wood Working Co., of Keyser, W. Va., has been incorporated with a capital of $10,000 to manufacture plumbers' woodwork. The incorporators are R. G. Richardson and T. D. Lepps, of Keyser, and A. W. Stedman and W. G. Frick, of Camden, N. J.

COMPLETES LARGE ADDITION.

H. O. Canfield Co., of Bridgeport, Conn., has recently completed the construction of a three-story addition, 80 by 40 feet, to its plant in that city.

UNITED STATES RADIATOR CORPORATION OPENS OFFICE AT INDIANAPOLIS.

The United States Radiator Corporation, Detroit, Mich., has recently opened a branch office at Indianapolis, Ind. J. F. Esperon, who for several years, has been connected with the Chicago branch of the concern, will be in charge of the new branch.

ANNUAL MEETING OF THE NATIONAL ASSOCIATION OF BRASS MANUFACTURERS.

The annual meeting of the National Association of Brass Manufacturers will be held on December 11th, 12th and 13th at the Hotel Astor, New York City. During the sessions, officers for the ensuing year will be elected. It is expected that a large and representative attendance of members will be a feature of the meeting.

APPOINTED SALES REPRESENTATIVE FOR NEW YORK CITY AND VICINITY.

The Waterlite Power & Engineering Co., of 18 Murray Street, New York City, has just been appointed sales representative for New York and vicinity for the Maytag multi-motor, electric, hand and engine-driven washing machines, made by the Maytag Co., of Newton, Iowa. The Waterlite Co. will carry a complete stock of these products to give its customers prompt shipments.

R. J. DONOVAN CO. IN LARGER QUARTERS.

The R. J. Donovan Co., of New York, Inc., has recently moved its business from 47 Cliff Street to 217 Pearl Street, New York City. This concern recently succeeded to the business of McLoughlin & Donovan, Inc., Mr. Donovan having purchased the interest of Mr. McLoughlin last summer. In the new quarters, the company has arranged a carefully selected stock of pipe, fittings and valves, and it also has cellars in addition for the storage of pipe. Mr. Donovan, previous to his entry into business in partnership with Mr. McLoughlin, received a thorough business training with the Eaton Cole & Burnham Co., of Bridgeport, Conn., and McMann & Taylor, of New York City.

THE APPLICATION AND ADMINISTRATION OF THE NEW EXCESS PROFITS TAX.

Frank S. Hanley, of New York City, secretary of the Eastern Supply Association, has recently sent the following communication to members of that organization:

"We are just in receipt of the subjoined request from Hon. Daniel C. Roper, Commissioner of Internal Revenue, Washington, D. C., in respect to the Excess Profits Provisions of the War Revenue Act. We trust we may hear from you immediately, as the request from the Commissioner of Internal Revenue gives our members an opportunity to place themselves on record regarding the interpretation, application, or administration of the Excess Profits Provisions of the new law.

"The Secretary of the Treasury desires to administer the Excess Profits Provisions of the War Revenue Act in a manner that will accomplish the full purpose of the law and cause as little inconvenience as possible to the business interests of the country. To this end the Secretary has created an Excess Profits Advisory Board to analyze the law and to digest and consider in connection with plans for its administration the suggestions received from those who will be required to pay the taxes.

"You are respectfully invited to submit to the Bureau of Internal Revenue any suggestion you may desire to offer with respect to the interpretation, application, or administration of the Excess Profits Provisions of the new law. You are particularly requested to outline the method of computing 'invested capital' under Sections 204, 207 and 208 of the Excess Profits Tax Law, which will be most practicable and accurate for those engaged in the industry which you represent. You may find it advisable to refer this matters to several subcommittees of your association, in which case it is hoped that you will act as a clearing house for the purpose of eliminating duplicate suggestions from your line of industry, and in assisting to keep the work of the Advisory Board within proper compass."

Corporation Income and War Profits Tax.

The normal corporation income tax of 2 per cent is increased 4 per cent, making the total amount under the two laws 6 per cent, but allows credit for income received from other corporations, which were taxable upon their net income. This tax is levied for the calendar year 1917 and for every year thereafter.

In addition, a "war excess profits tax" is levied for the calendar year 1917 and every year thereafter.

The new law establishes a "pre-war period," which means the calendar years 1911-12-13, and this additional tax is levied after allowing, in the case of corporations, $3,000 exemptions, and in the case of an individual citizen, or partnership, $6,000, and "an amount equal to the same

percentage of the invested capital for the taxable year which the average amount of the annual net income of the trade or business during the pre-war period was of the invested capital for the pre-war period (but not less than seven or more than nine per centum of the invested capital for the taxable year)."

The rates are graduated from 20 per centum of the amount of the net income in excess of the above deductions and not in excess of 15 per centum of the invested capital for the taxable year.

Twenty-five per centum of the amount of the net income in excess of 15 per centum and not in excess of 20 per centum of such capital.

Thirty-five per centum of the amount of the net income in excess of 20 per centum and not in excess of 25 per centum of such capital.

Forty-five per centum of the amount of the net income in excess of 25 per centum and not in excess of 33 per centum of such capital.

Sixty per centum of the amount of the net income in excess of 33 per centum of such capital.

All corporations and partnerships are deemed to be engaged in business and in a single trade or business, and their income from different sources derived is to be considered as the income of such business.

The Secretary of the Treasury may, upon complaint, allow a deduction which "shall be the sum of an amount equal to the same percentage of its invested capital for the taxable year which the average deduction for such year of representative corporations, partnerships or individuals, engaged in a like or similar trade or business, is of their average invested capital for such year."

Invested Capital.

The new law defines invested capital as follows:

"Sec. 207. That as used in this title, the term 'invested capital' for any year means the average invested capital for the year, as defined and limited in this title, averaged monthly.

"As used in this title 'invested capital' does not include stocks, bonds (other than obligations of the United States) or other assets, the income from which is not subject to the tax imposed by this title, nor money or other property borrowed, and means, subject to the above limitations:

(a) In the case of a corporation or partnership: (1) Actual cash paid in, (2) the actual cash value of tangible property paid in other than cash, for stock or shares in such corporation or partnership, at the time of such payment (but in case such tangible property was paid in prior to January first, nineteen hundred and fourteen, the actual cash value of such property as of January first, nineteen hundred and fourteen, but in no case to exceed the par value of the original stock or shares specifically issued therefor) and (3) paid in or earned surplus and undivided profits used or employed in the business, exclusive of undivided profits earned during the taxable year: Provided, that (a) the actual cash value of patents and copyrights paid in for stock or shares in such corporation or partnership, at the time of such payment, shall be included as invested capital, but not to exceed the par value of such stock or shares at the time of such payment, and (b) the good will, trademarks, trade brands, the franchise of a corporation or partnership, or other intangible property, not to exceed the actual cash or actual cash value of the tangible property paid therefor at the time of such payment; but good will, trade-marks, trade brands, franchise of a corporation or partnership, or other intangible property, bona fide purchased, prior to March third, nineteen hundred and seventeen, for and with interests or shares in a partnership or for and with shares in the capital stock of a corporation (issued prior to March 3, 1917) in an amount not to exceed, on March 3, 1917, 20 per cent of the total interests or shares in the partnership or of the total shares of the capital stock of the corporation, shall be included in invested capital at a value not to exceed the actual cash value at the time of such purchase, and in case of issue of stock therefor not to exceed the par value of such stock.

"(b) In the case of an individual, (1) actual cash paid into the trade or business, and (2) the actual cash value of tangible property paid into the trade or business, other than cash, at the time of such payment (but in case such tangible property was paid in prior to January 1, 1914, the actual cash value of such property as of January 1, 1914) and (3) the actual cash value of patents, copyrights, good will, trade marks, trade brands, franchises, or other intangible property, paid into the trade or business, at the time of such payment, if payment was made therefor specifically as such in cash or tangible property, not to exceed the actual cash or actual cash value of the tangible property bona fide paid therefor at the time of such payment."

In the case of trades or businesses having no invested capital or not more than nominal capital, a tax of 8 per cent upon the net income is levied under this title after allowing the deduction of $3,000 in the case of corporations and in the case of partnerships or individuals, $6,000.

The terms "trade" and "business" include professions and occupations.

TREMENDOUS INCREASE IN OUR TRADE WITH SOUTH AMERICA.

This nation's trade with the countries of South America is at least three times as extensive as it was in the year immediately preceding the outbreak of the great world war. In the eight months ended with August (the latest month for which figures are available) exports to the sister republics of the South aggregated $188,000,000 compared with only $65,000,000 in the corresponding period in 1914. Imports from South America totalled $433,000,000 compared with $157,000,000 in 1914. Thus, it will be seen, this country's total trade with the southern continent in the first eight months of this year represented a value of $620,000,000 against only $222,000,000 in the same time in 1914.

To Argentina, Peru and Chile, exports from the United States more than trebled, while those in Uruguay quadrupled. The exports to Venezuela, Colombia, Brazil and Ecuador were practically three times as great as those in 1914. Argentina contracted for $62,256,000 worth of United States products compared with only $19,649,000 in the first eight months of 1914. Exports to Brazil were $40,197,000 against $15,973,000; to Chile, $32,971,000 against $10,800,000.

The records at Washington show large increases in imports from the South American countries, especially in those from Argentina, Chile, Uruguay and Peru. The United States imported $133,869,000 of Argentina products in the first eight months of this year, compared with $40,752,000 in the corresponding period of 1914. Chile sold us $96,626,000 against $15,954,00; Uruguay, $28,389,000 against $8,522,000, and Brazil, $106,335,000 against $62,633,000.

The pronounced increases in both exports and imports continued unbroken right down to the last day on which

figures were available and it is reported that the showing for the rest of the year will be even better.

A better argument in favor of building a mercantile marine and a strong navy to protect it would be hard to find. These figures should bring home to the American producer the realization that his interests lie in supporting the government with money to finance the war and to prepare for world trade after the great conflict ceases. Every dollar now loaned to the government will be increased many times when the piping times of peace return.

Personal Mention

Edward Blywise, president of the Republic Brass Mfg. Co., of Cleveland, O., was in New York City last week.

W. S. Newkirk, sales manager of Niagara Radiator & Boiler Co., of North Tonawanda, N. Y., called on the trade in Philadelphia last week.

William Devine, Jr., western representative of the Thomas Maddock Sons Co., of Trenton, N. J., has returned to Chicago from a business trip through Iowa territory, where he reports business conditions are very encouraging

J. F. Carroll, of the Chicago office of the Standard Sanitary Mfg. Co., of Pittsburgh, Pa., has left on a business visit to the concern's plants at Louisville, Ky., and Tiffin, O. He is not expected back in Chicago before Monday, December 24th.

Jos. G. Perkins has been appointed Toledo district sales manager for the Pittsburg Water Heater Co., of Pittsburgh, with office at 703 Jefferson Avenue, Toledo, O.

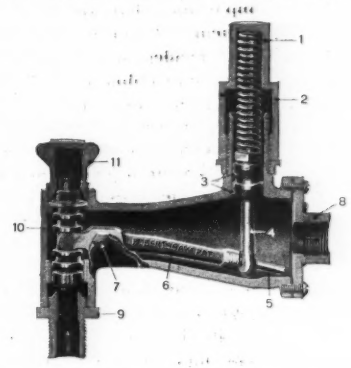
J. B. Longini, western representative of the Haydenville Co., of Haydenville, Mass., has just returned to the Chicago office of the company, after a business trip through middle western territory, including Omaha, Des Moines, Kansas City and St. Louis.

W. S. Hill, who for several years, has been manager of the Chicago branch of the United States Radiator Corporation, Detroit, Mich., has resigned to enter another line of industry. Harry Booth, manager of the Kansas City branch, has succeeded him as manager of the Chicago branch. Mr. Booth will be succeeded in Kansas City by Ward Hillman, who for a number of years, has been connected with the New York office of the corporation.

"Have another 'Sandy Special.' Smoke up, gentlemen." These festive words will no doubt vibrate through the atmosphere of the Illinois Athletic club—in and about the dining room on the evening of Saturday, December 1st, when E. W. Sanborn, Chicago manager of the Lavigne Mfg. Co., and the Detroit Range Boiler Co, both of Detroit, and A. S. Lindeblad, of the Hoffman Specialty Co., of Chicago, take it upon themselves to entertain a number of Jackies from the Great Lakes Naval Training Station. Turkey will be the feature of the evening. The Jackies, who will be entertained by Messrs. Sanborn and Lindeblad, are among those who were obliged to remain on guard duty on Thanksgiving day. The example set by these two gentlemen will be duplicated in other instances, as it is understood, that many of the Jackies who failed to get Thankgiving dinners, will be invited to partake of turkey at the invitation of business men of the city.

THE ROBERTSHAW PRESSURE REGULATOR.

The accompanying cut shows a sectional view of the Robertshaw pressure regulator, which has just been placed on the market by the Robertshaw Mfg. Co., of Youngwood, Pa. The installation of this device is said to eliminate noise in closet tanks and bath fixtures, even in localities where the pressure is 100 pounds or more. In introducing it to the trade the manufacturer describes its operation as follows: "The water passes to the inside service lines through the regulator through the outlet (8). If the pressure exceeds that desired the plunger (4) is forced up carrying with it the lever (6). When this lever is raised the valve stem (10) is forced down and the valve is closed or partly closed. If the pressure decreases the spring forces the plunger (4) down, raising the stem (10) and opening the valve. The stem (10) is balanced by communicating the pressure from the bottom to the top through a small hole running throughout its length. No. 1 is the balancing chamber. The amount of tension on the spring determines the amount of pressure in the line, as the more the spring is compressed, the more pressure will be required to raise the plunger (4)."



The Robertshaw Pressure Regulator.

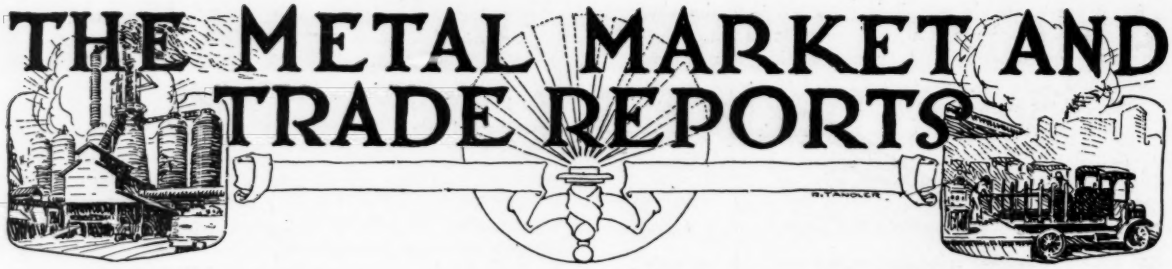
A. Y. McDONALD MFG. CO.'S NEW CATALOGUES.

The A. Y. McDonald Mfg. Co., of Dubuque, Iowa, has just published two large catalogues, Catalogue E-1917, illustrating and describing all the goods manufactured and jobbed to the plumbing and heating trade, and Catalogue No. 11-1917, illustrating and describing the goods manufactured by the company, and issued for distribution among jobbers only. The former catalogue illustrates and describes plumbing and heating supplies, plumbers' brass goods, pumps and water supply systems, etc., and consists of 1,288 pages, 7½ by 9¼ inches in size. The latter catalogue contains 560 pages. Both volumes are well bound in stout cloth covers. Their compilation, printing, illustrations and the paper stock used in their production reflect great credit upon the concern in whose interests they are issued.

"TILE-IN" BATH-ROOM ACCESSORIES.

The Hughes-Evans Co., Inc., of New York City, has just issued a very attractive 12-page catalogue, illustrating and describing "Tile-In" china bath-room accessories, including soap holders, tumbler holders, paper holders, tooth brush holders, china grab rails, razor strop hooks, towel hooks, china brackets and shelves, etc.

THE METAL MARKET AND TRADE REPORTS



Steel and Iron.

At the present time the steel industry may be divided into three classes: Producers, the government and private consumers. The last named class is growing to be a factor of so little importance that soon it may not be necessary to consider them. Producers are subservient to the government, which decides upon the outturn of various individual mills and the distribution of the several products according to priority of importance. The movement of steel is almost, if not entirely, confined to the government purchases or consignments to manufacturers engaged upon government work. Recent orders comprise a number of locomotive cranes to the estimated value of $18,000,000 for use along the Atlantic seaboard and various shipping terminals. The Navy Department has called for bids on three large hammerhead cranes for the New York yards, which are the largest of their type and will cost about $2,000,000. The government has ordered 15,000 tons of plates for Italy. The demand for machinery of all kinds is constantly increasing. Every new government order of importance has its immediate effect in a new demand for tools and shop equipment, which in turn is felt in orders for the raw materials to the mills. The bulk of the material will go into direct manufacture, but the requisite tools and machinery add considerably to the sum total of the steel required. Steel companies are buying basis Bessemer and low phosphorus iron heavily in the open market. Some mills, which hitherto have produced all their own iron, have been obliged to go into the open market, because they are unable to secure fuel to operate their own furnaces. The orders are mostly extended over 1918, though some are for nearby delivery. But furnaces themselves are going out of blast for the same reason, and, unless some means are devised to increase the coal and coke supply and improve transportation facilities, it is hard to predict how the situation will end. Production of iron is expected to decrease, and this coupled with the extraordinary demand may cause serious embarrassment in the iron and steel manufacturing industries. Coke producers say they are doing all that is possible to further production, but the labor situation makes it impossible to man their plans properly. Most of the heavy orders lately have been from the West and were placed in Chicago. In the South and East furnaces are unable to keep pace with current contract obligations. Nothing but the fixed price prevents the market from rising to extremely high levels. The newly esablished prices are based upon the old standard grades of No. 2 foundry and basic iron at $33 at the furnace, and will be effective until January 1st. Prices are also based upon f. o. b. delivery at the furnaces, making the quotation at New York for No. 2 X Northern foundry, $33.50, tidewater.

Copper.

The copper situation at present remains about the same as described for several weeks past. It would appear from reports that a substantial surplus stock is being accumulated and there is no fear that any manufacturing consumer will go short. But the surplus on hand is required to meet current contracts, so that the Copper Producers' Committee feels justified in declining to fill new orders during the balance of 1917. An advance in prices after January 1st is looked for, because the national requirements and those of the Allies, as well as copper needed for commercial purposes, will be heavier than the present production, and it will be necessary to increase the outturn of some of the higher cost companies. But it is too early to speculate on the possibilities of an upward price revision. What most concerns the smaller trade is an arrangenemt whereby copper may be sold by dealers in small quantities at prices which would save them from loss and also provide a safeguard against speculators.

Tin.

The tin situation in New York is critical, for never before has the market been so bare of spot supply of any grade, and while some consumers have more than they need at present, others cannot secure a pound. Arrivals in New York during November so far are 900 tons, which was all sold on arrival, and consequently do not relieve the spot situation. Many consumers would be glad to avail themselves of the high prices and release sufficient to afford relief to those who are short, but under the terms of the British regulations, they are forbidden to do this. Just how acute the situation is, was illustrated last week by a representative of the government attempting to buy 20 tons for emergency use. The tin could not be found, and it became necessary to requisition the quantity needed from a lot of 250 tons, which had arrived in port the day before and which was destined for immediate consumption. Unless the London Rubber and Tin Exports Committee can be induced to issue the much needed permits, industry here, dependent upon tin as a raw material, will be brought to a standstill. Banka tin has been out of the market for over a week, but now that the Dutch and American governments have arrived at an understanding it is expected that trading will be resumed. Nominal prices are as follows: Straits 72 cents to 74 cents; Banka 73 cents; Chinese 70 cents.

Lead.

Demand for lead is more noticeable, as the market grows firmer. Activity is not such as to force an advance at present, but it is sufficient to hold prices steady at current quotations. Leading producers are quoting New York delivery at 6¼ cents and East St. Louis at 6.17½ cents, but are not booking orders at these prices.

Spelter.

Demand for spelter is quiet again caused by a falling off in the production of galvanized sheets as a result of fixing the price too close to that of block metal to make galvanizing profitable. It is also expected that the government will fix a price for spelter in excess of the present market. For spot and nearby delivery in New York the price ranges from 8 cents to 8¼ cents.

Old Metals.

The market in old metals is very quiet, and there is practically no change in the prices quoted last week.

AMONG THE PLUMBING AND HEATING CONTRACTORS

Illinois

Chicago and Vicinity.

Robert Gordon, of 622 West Monroe Street, has recently been awarded the contract for the installation of the heating system in a manufacturing plant to be erected, at a cost of $110,000, at 2700-2720 Southport Avenue. The plumbing contract was awarded to the M. J. Corboy Co., of 178 West Randolph Street.

Noble & Thumm, of 2313 Lincoln Avenue, will install the plumbing in a building of forty-eight apartments, to be erected at a cost of $160,000, at 4623-27 North Ashland Avenue. The architect is Percy T. Johnstone, 30 North Michigan Avenue.

The American Plumbing & Heating Corporation, of 3550 North Clark Street, has secured the contract for installing the heating system in an apartment house of eighteen flats, to be built at a cost of $60,000, at 1445-49 Victoria Street. The architect is R. G. Pierce, 10 South LaSalle Street.

The contract for the installation of the plumbing in six residences, to be built at 6007-6049 Bernice Avenue, has recently been awarded to G. Lapenda, of 6375 Cuyler Avenue. The heating contract went to V. A. Smith, of 213 West Lake Street. The architect is A. V. Teisen, of 3325 Fullerton Avenue.

E. Pickett, of 5425 West Lake Street, has been awarded the contract for the heating installation in a new residence at 4037 Marmora Avenue.

J. J. Daly, of 408 Wells Street, will remodel the plumbing in a storage building at 418 South Canal Street. The heating contract went to O. W. Klender & Co., of 3140 North Clark Street.

The contract for the installation of modern plumbing in a two-story apartment building, at 3652 Herndon Avenue, has been awarded to E. C. Oakes, of 3634 Fullerton Avenue.

Samuel R. Lewis, of the Lewis & Capron Co.; Dr. E. Vernon Hill, Ventilation Division, Chicago Health Department, and Harry M. Hart, of the L. H. Prentice Co.; all of Chicago.—From "Domestic Engineering" Photo.

John R. Kehm, of 8 East Austin Avenue, has secured the contract for the installation of a new heating system in a building at 1117-25 North 35th Street, consideration, $4,000. The plumbing will be installed by R. J. Nelson, of 836 West Adams Street.

C. V. Riley, of 6420 Cottage Grove Avenue, has secured the plumbing contract on a warehouse and office building to be erected at a cost of $35,000 at 2251-53 Calumet Avenue

William Maloney, of 5434 South Halsted Street, will install the heating system in a bungalow to be built at a cost of $7,000 at Garfield Boulevard, near Hermitage Avenue. The plumbing work will be installed by M. J. Byrne, of 1543 West 69th Street.

The Stanley Plumbing & Heating Co., of 6554 Cottage Grove Avenue, has been awarded the contract for installing the plumbing in a thirteen-flat apartment building, to be constructed at a cost of $24,000, at 2664-72 East 77th Street. The architect is J. N. Coleman, of 7100 East Chicago Avenue.

H. P. Reger, of 3514 Lake Park Avenue, will install the plumbing in a new garage at 7012 Euclid Avenue.

Menus Johnson, of 7841 Burnham Avenue, has been awarded the contract for the installation of the heating system in a building of eighteen apartments, to be constructed at a cost of $45,000, at 76th Street and Calumet Avenue.

J. A. Boecher, of 1321 Thorndale Avenue, will install the plumbing in a six-family apartment building, to be erected at a cost of $15,000.

From plumbing to farming is not as radical a step as one might imagine, considering the fact that, ever and anon, one hears of members of the plumbing craft who have heard the call of "back to the soil." One of the men of the trade who recently, at least partially, harkened to the call, is E. C. Wagner, the popular west-side master plumber and treasurer of the Chicago Master Plumbers' Association. He returned recently from Gifford, Ind., where he has cultivated a thirteen-acre farm. That he obtained results from his agricultural efforts is evidenced by the fact that his farm yielded a number of sacks of potatoes, onions and beans, etc. From this success it is not unlikely that his next year's crop will be even more abundant.

P. M. Murphy, of Chicago, past president of the National Association of Master Plumber, has just recovered from an injury to his foot, which at first indicated symptoms that threatened to develop into blood poisoning. He was incapacitated for several weeks.

Other Cities In the State.

Johnson Bros., of 402 Neil Street, Champaign, will remodel the plumbing and heating systems in a store at Church and Neil Streets.

The Reliable Heating & Plumbing Co, of Champaign, has secured the contract for installing the plumbing and heating work in a church, to be built at a cost of $28,000, in Danville.

J. P. Quigley, of 47 South Cherry Street, Galesburg, will install the heating and plumbing system in a candy

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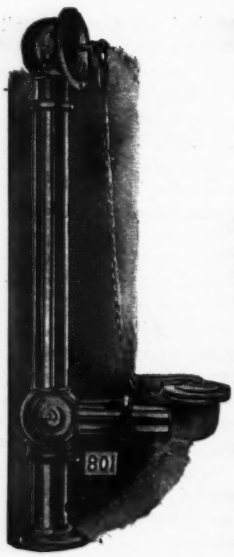
always give full measure of value in Quality and Service

No matter what price you pay, you cannot secure better products.



The "FEMCO" Connected Waste and Overflow

has the FROST Quality "Built-in" which assures long life and perfect service.

The "FEMCO" was a pioneer in the field, not only in Wrought Brass Wastes, but it was the **Original Adjustable Waste.**

It proved beyond a doubt the practicability of wrought brass for these fittings.

Special Features:

Fits without sawing.

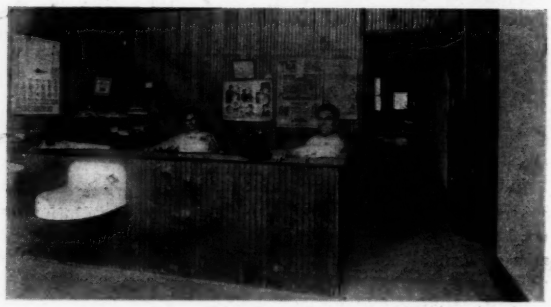
Slip Joints make it adjustable to any condition, allowing a variation of 2½ inches in height and 1½ inches between centers.

Heavily nickel plated and polished.

The Frost Manufacturing Co.
Kenosha, Wis.

factory, to be erected at a cost of $60,000 on Mulberry Street, in that city.

Haeggquist & Swords, of 1020 Fourth Avenue, Rockford, have recently secured the following contracts: Plumbing and heating in the S. M. and L. F. Club building at 1021 Third Avenue, now under construction, and in the new foundry being built for the Rockford Milling Machine Co. These two contracts amount to $5,000. This



The Office of Haeggquist & Swords, 1020 Fourth Avenue. Rockford, Ill.

firm will also install modern plumbing in Svea Sonner's Building, at Seventh Street and Third Avenue. A corner of the firm's office is shown in the accompanying illustration.

California

San Francisco and Vicinity.

In view of the fact that private building of the larger sort is not expected to be a very important feature of the next few months, local plumbers are turning their attention very largely to municipal, state and federal work. The latter has for some time been a very important part of the business, but municipal and state work have been allowed to drag in order that they might not come in competition with the more important work of the federal government. Now, however, some action is promised by both state and municipality. San Francisco has already provided funds for public school buildings to the aggregate of $3,500,000, and the Board of Public Works is now arranging to have plans drawn for a number of buildings and improvements. Appropriations made by the last State Legislature for work at the various state institutions foot up to very nearly $3,000,000; and from now on figures will be asked for right along for the work represented in these appropriations.

D. Houle was the successful bidder for the plumbing, electrical and other work for the F. G. Doronham residence on Diamond Street. It is understood that the plumbing will be sub-let.

The Navy Department continues to do a lot of important work at the Mare Island Yard in San Francisco Bay. Bids have already been opened for a submarine base, and contracts are expected to be awarded shortly. A large addition to the Navy Yard Boiler Shop will be built as soon as contracts can be awarded, and an incinerator plant will be built during the winter at the marine barracks.

Other Cities in the State.

Carlson & Goff, plumbers of Santa Ana, with a branch establishment at Laguna Beach, have now moved into fine new quarters. The new store is centrally located and closer to the bulk of their Santa Ana business. A fine display room has been arranged so that prospective cus-

tomers can see plumbing fixtures connected up and in operation.

Ground will shortly be broken at Fresno for a new natatorium. There will be several swimming tanks, the largest being 100x75 feet in dimensions; and there will be a gymnasium equipment, dressing rooms, roof garden, etc.

The Board of Education at Fresno is advertising for a considerable quantity of plumbing supplies.

Weinstock, Lubin & Co., of Sacramento, have had plans completed for a ten-story department store building to cost approximately $750,000. The building will be one of the finest store buildings on the Coast.

The Board of Education of Los Angeles is advertising for bids for furnishing and installing plumbing in a new sanitary building at the East San Pedro School.

Carl Stull, formerly in the plumbing business at Glendora, but who has recently been in business at Modesto, Cal., has returned to Glendora and has bought out the plumbing business of William Stevens, who will go into another line.

Figures are now being taken on the heating system for the new East Main Street grammar school building in Santa Maria.

A Union High School will soon be erected, at a cost of $65,000, on a 23-acre site just outside of Turlock.

Oakland plumbers and heating contractors are now figuring on work for two new branch library buildings to be erected at a total cost of about $70,000.

Washington

Seattle and Vicinity.

The Seattle School Board, in outlining next year's building plans, has announced that the grade schools of the city will be given priority over the high school building program. This is recommended by City Superintendent Frank B. Cooper to meet the immediate and pressing deand for more grade schools, while the high schools are adequate for the present. The building program will be put in shape at the earliest possible moment, so that the proposed buildings may be completed before the school term opens next fall.

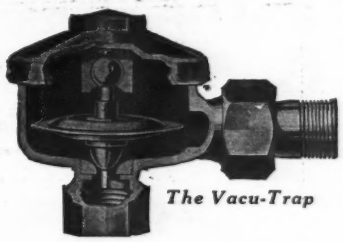
Ole Hanson & Co., of Seattle, have announced that their firm will construct fifty houses on Charleston property, near Bremerton and the Puget Sound Navy Yard, to meet the congested living conditions that prevail in that section. Contracts have been let for the first thirty buildings, and work on the remaining twenty will begin in the near future.

The Seattle City Council proposes the erection of a three-story addition to the Isolation Hospital at The Firlands, to cost $15,000. The structure is to contain twenty rooms and ten baths.

The Marion Building, at Second Avenue and Marion Street, Seattle, owned by the J. M. Colman Estate, will be remodeled into a modern office building.

The Nippon Hospital Association, Seattle, will construct a three-story and basement, brick and concrete hospital on Weller Street, to cost $40,000. The structure will be 65 by 90 feet, and will have 25 rooms and six wards. Architect Robert Brown, who is preparing plans, will receive bids for all the contracts.

The Sound Construction & Engineering Co., of Seattle, has been awarded the contract by the Quartermaster Department of the United States Navy, for the construction of cantonments at Forts Casey, Worden and Flagler. Plans and specifications have not been received by the



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The RELIABLE not only supplies most efficient and economical heating to your customer, but provides a good margin of profit for you; and the only "comebacks" are repeat orders.

RELIABLE
Vacuum Heating Equipment

Air-Line
Return-Line
Vacu-Vapor

is designed for buildings of every class and size. All parts are made complete, tested, assembled and permanently adjusted at our factory. Install, that's all.

Write today for Catalog "DH," giving full information regarding RELIABLE Heating Equipment, Vacu-Traps, Vacu-Checks, Vac-Ustats and Vacu-Graduate Packless Radiator Valves. It costs only a postage stamp.

THE BISHOP-BABCOCK-BECKER CO.
Factories and General Offices, CLEVELAND, OHIO

New York Chicago Cincinnati St. Louis
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The "S & K" RAINBOW

Special Compression Shampoo Fixtures

C—109½

Are strictly high grade products in every particular and their low price renders them doubly attractive. Cut C-109½ furnished complete with hose and sprinkler. **In ordering specify distance from center of cock holes.**

C-955

Lower Basin Cocks, Quick Compression

One of our new fixtures is shown in Cut C-955. Embodies all the merits surrounding "Quick Compression Work." They are quick action and time savers for the operator. S & K products are standard and for high grade work no better fixtures can be found. It is to the advantage of every jobber and plumber to be familiar with our line. Write for prices.

STREET & KENT MFG. CO.

549 Fulton Street Chicago, Ill.

company, but it is understood that five units will be constructed at Forts Worden and Casey, and four units at Fort Flagler.

Other Cities in the State.

The Tacoma District Heating Co. plans the extension of its underground system, which will consist of a high pressure line from the power plant to Tenth Avenue. The extension will cost $15,000.

Porter Bros., of Spokane and Portland, Ore., contractors for the sewer, sidewalk and street improvements at the concession village to be erected at Camp Lewis, American Lake cantonment, have been awarded the contracts for the construction of all buildings in the Amusement Zone. The contract will approximate $1,500,000 and will involve the construction of over 300 permanent buildings. Morton MacCartney, former city engineer of Spokane, will have charge of the work. A. E. Riggs and R. M. Vantyne, Peyton Building, Spokane, have been named architects, and plans for the first five buildings will be ready within two weeks.

Charles W. McKee and H. W. Casaday, Tacoma theater magnates, have secured theater concession at the Zone and will erect two large theaters in the immediate future. The structures will be of the Swiss Chalet type, and will be permanent. Four other theaters are planned for the village.

The James Smyth Heating & Plumbing Co., of Spokane, was awarded the contract for installing the plumbing and heating systems at the $275,000,000 shipbuilding project on Hog Island, near Philadelphia. The contract includes not only the plumbing and heating systems for the docks and yards, but for all the ships to be built there. Mr. Smyth thinks that the job will last at least two years. Mr. Smyth expects to complete about November 30th the plumbing and heating contract representing $1,500,000 at the Camp Custer, at Battle Creek, and it is stated he will then move his office and working force from Camp Custer to Hog Island. The company has done some of the largest heating and plumbing work in the Northwest, including the heating and plumbing in the Old National Bank Building and Davenport Hotel, and Union Depot, all in Spokane, and in the First National Bank Building at St. Paul, Minn.

The Isbister Heating Co., of Spokane, on its bid of $3,050 secured the contract for the lighting and heating systems in the Lewis Clark swimming pool. Other bids were: Edward McCaffery, $3,201; Standard Plumbing Co., $3,336.

The State Board of Control at Olympia, has awarded the contract for construction of a hospital and dormitory building at Orting, for the State Veterans' Home, to the Ferro Concrete Co., of Seattle, on a bid of $26,985. The heating contract was awarded to Fred Swinth, of Chehalis, on his bid of $5,177, and also the plumbing contract on his bid of $3,821. Other bidders were for heating and plumbing respectively: Eckart Heating & Plumbing Co., $5,301 and $4,792; Rautman Heating & Plumbing Co., $5,750 and $4,407; Ben Olson Co., $6,225 and $4,825; W. D. Allen, $5,828. All were Seattle bidders.

The navy yard at Bremerton, which has heretofore employed 1,500 men in normal times, now employs 5,000 workmen, who with their families have constituted a serious drain on the resident capacity of that city. Small houses and bungalows are springing up over night, and still the builders are wholly unable to supply the demand for homes, and many of the workmen must travel to the adjoining small towns to make their residence. Commander of the Yard Coontz has asked the Commercial Club to aid in an effort to build houses to care for this increased population.

Senator A. E. Judd, of Chehalis, has purchased a lot in that city, on which will be erected a modern office building.

Construction work has been started on the proposed sugar factory to be erected by the Utah-Idaho Sugar Co., at Toppenish. The new plant will necessitate considerable building to house the employes, and it is stated that at least twenty-five or thirty dwellings will be needed as soon as the plant is completed. Contractors in that city are perfecting plans to construct the new residences.

Oregon

According to statistics recently compiled by the Portland Realty Board increases, ranging from 170 to 216 per cent, in the industrial population of Portland have been noted. It is stated that the city is growing so rapidly that it is becoming difficult to secure dwellings, and apartment houses are filled. For instance, one suburb which has shown a falling off in population for five years, shows an increase of over 170 per cent during 1917, and there are very few inhabitable houses vacant in the district. The great growth of the numerous districts is resulting in a general overhauling and improvement of properties, and it is predicted that the rental situation will react heavily on property sales and on building operations.

Bingham & McClelland, of Portland, have the contract for the erection of a two-story building for the Spaulding Estate, to cost $40,000. The structure will be 100x100 ft. Sutton & Whitney, the architects who prepared the plans, have not yet awarded the heating and plumbing contracts

Sturges & Sturges, of Portland, who were awarded the contract for the heating system in the medical school of the University of Oregon, have withdrawn their request for the return of their proposal, and will proceed with the work.

The City Council of Portland will allow the sum of $5,000 in the 1918 budget for new buildings at the Washington Park Zoo. An item of $8,000 will also be allowed for a comfort station to be built in the vicinity of Second and Washington Streets.

F. A. Naramore, Superintendent of School Properties at Portland, has completed plans for the proposed four-room addition to the Kennedy School, for which bids will be opened in the near future. Plans for the Hawthorne-Buckman School, to cost $190,000, are practically completed, and bids will be called for in the near future.

The Southern Pacific Railway Co. plans the construction in Salem of a $30,000, 121x33 ft. brick, concrete and stucco depot. The old structure will be moved and used as temporary station. Plans and specifications are in preparation, and construction work will start within thirty days.

Buildings erected within the city limits of Astoria in the future will have to have permits, according to the ruling of Fire Chief Foster, who is also city plumbing inspector. The ruling is the result of the action of the McEachern Shipbuilding Co., which failed to secure permits for the 50 cottages which the company is now constructing on company property.

S. L. Burnaugh, of Enterprise, will construct a two-story brick building, 120 by 56 feet. The lower floor will be used for office and store rooms, and the upper story will be divided into apartments. The structure will be steam heated.

The city of Eugene issued an exceptionally large number of building permits in October, according to the report of

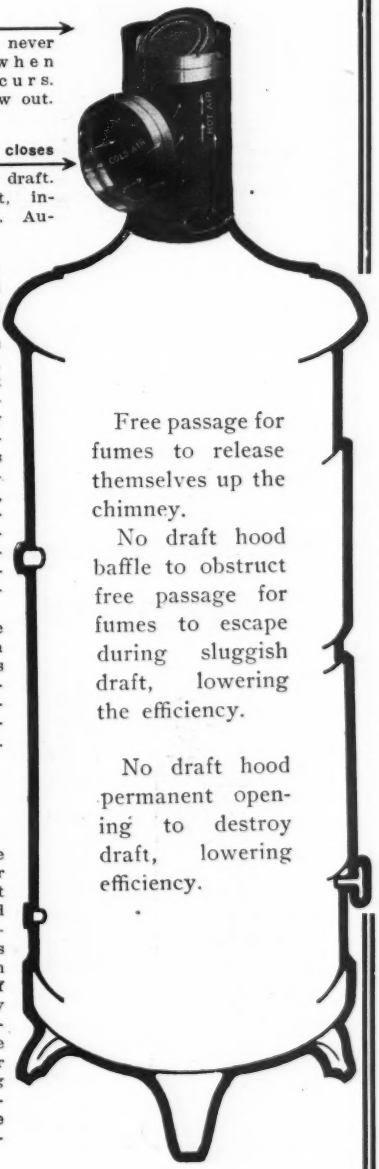
Mr. Plumber:

You must answer complaints and be responsible for the efficiency of the water heater you install, therefore judge between our Automatic Draft Regulator and the draft hood.

Highly recommended by the largest Gas Companies, who have made complete laboratory and practical tests.

Safety valve never fails; closes when down draft occurs. Flame can't blow out. Automatic.

Check valve **closes** during sluggish draft. Increased draft, increased opening. Automatic.



Free passage for fumes to release themselves up the chimney.

No draft hood baffle to obstruct free passage for fumes to escape during sluggish draft, lowering the efficiency.

No draft hood permanent opening to destroy draft, lowering efficiency.

Perfect combustion at all times spells high efficiency.

Wind changes continually, therefore draft in practically every chimney changes continually, sometimes sluggish, sometimes excessive, hence the necessity of automatic draft control, to maintain high efficiency.

Write for blue print "Common Draft Troubles and Their Remedies" and proper chimney construction. (Free.)

True, Mr. Plumber:

You can use our Regulator when the draft hood fails and get out of trouble; that has been done in thousands of cases, but why not avoid trouble, and have every heater you install ring the bell for efficiency? The price is insignificant.

Sizes: 3-in., 4 in., 5 in., 6 in., 7 in., 8 in.
Black or Galvanized Iron.

The Lezius Automatic Draft Regulator Co.
Cleveland, Ohio

Armstrong Machines

The No. 00 Armstrong machine can be used for either hand or power and the change from either to the other is made easily and quickly. It is portable, compact, strong, durable and very fast. It is built to get the full benefits of Armstrong quick opening and adjustable dies. It takes dies from 1" to 4" inclusive.

Armstrong No. 00 Interchangeable Hand and Power Pipe Threading and Cutting Machine.

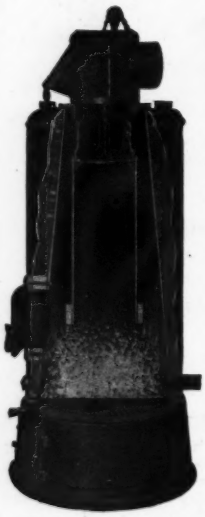
All moving parts run in oil and are enclosed in a dirt and chip proof case. The cutting off attachment works entirely automatic. The Die Head has no gear teeth where it touches the shell. A large journal bearing gives greater wearing surface and prevents the Die Head from wearing loose.

Send for our catalogue of Pipe Threading and Cutting Machines

All parts are lettered and interchangeable of standard construction so that repair parts may be ordered separately.

The Armstrong Mfg. Co.
284 Knowlton St., Bridgeport, Conn.

Without A Fault



WILKS
Water Heaters

are giving universal satisfaction in all classes of buildings where a supply of hot water is required.

Fire being completely surrounded by water effects a great fuel saving.

Perfect circulation is assured by vertical movement of water.

Cannot leak. No coils, bolts, flues, packing, sections or cast iron cylinders.

You can guarantee the WILKS to burn any kind of coal successfully and economically.

Write for Catalog and Discounts to the trade.

S. Wilks Manufacturing Co.
3517 Shields Avenue **Chicago**

the City Building Inspector. These permits included remodeling of business and residence properties, as well as many new homes.

Idaho

The Gem Construction Co., of Nampa, plans the construction of a one-story brick building, to contain five-room apartments, at a cost of $15,000.

Chas. H. Sebree, of Caldwell, will erect a five-story office building in that city to cost $80,000. Plans are now under preparation.

Hailey, Idaho, will soon vote on the proposition of issuing bonds to the amount of $100,000 for the construction of a waterworks system.

Montana

The city of Havre has experienced a remarkable growth since the first of January. A compilation of the records show that 144 building permits have been issued for structures costing an aggregate of $406,715. A large number of residences have been built.

The city of Malta boasts that it has never had a "boom," but that the growth has been steady, and buildings erected have been of the substantial kind. During 1917 several large business blocks have gone up, a new power plant built, and about fifty private residences constructed. The plumbing and heating industry in that section is in a prosperous condition, and contractors report that they have been busy all summer and fall.

The city of Butte, according to the building inspector's reports, is getting ready for the winter, and while large building projects are under way, the small residence work is very light. A large number of permits have been issued for repairs to residences, and heating and plumbing contractors report that jobbing is very active.

A. M. Holter and associates, of Helena, propose the construction of a five-story, 80 by 150 ft., theater building, to cost $125,000, and plans are now under preparation.

Missouri

St. Louis and Vincinity.

The plumbing equipment installed in the bar of the Hotel Statler in St. Louis, which has just been completed is considered the most elaborate and artistic piece of workmanship in this section of the country. The contract for this work was entirely independent of the other plumbing work in order that it might be given special attention. The public or main bar is forty-four feet in length and is lined with German silver. In addition to this there are two service bars, one on the main floor for the use of the dining room and one on the roof garden in which the waiters may prepare the orders of the guests. The main bar is equipped with two seven-tap beer drawing stations. Six of the taps are used for beer and one for ale. An extra tap is provided for ice water service. These stations are worked on the flat double coil system. Each of the service bars is equipped with a six-tap outfit similar to the one used in the main bar. All stations are provided with an electric automatic air compressor, electric

motor and an automatic cut off. Either carbonic gas or compressed air can be used to draw the beer and at either high or low pressure. All of these fittings are also of German silver. The tank of these stations has a capacity of forty gallons.

Another feature of this equipment is a large carbonating plant which provides the hotel with the facilities for manufacturing and bottling their own beverages and has been installed on the same thorough and impressive scale as the other appliances. This plant is a fifty-gallon container with an automatic carbonator, a large enameled reservoir, automatic float and cut off, double service hot water coil and a double drain board, also a large filter with a large automatic pressure syphon filling machine. The carbonating plant is also fitted with Cork and Seal filling machinery with an automatic motor attachment for applying crown seals. Every apparatus is so arranged that if one system should become temporarily disordered, it would not inconvenience the management, as a double system is provided for and is always in shape for instant operation.

Georgia

Atlanta and Vicinity.

The Atlanta Association of Master Plumbers, of which L. F. McDonald is secretary, has moved its offices from 601 Chamber of Commerce Building to 409 Central Building, Atlanta.

Ollie Wingate, of 321 Edgewood Avenue, Atlanta, reports "business never better." Besides a goodly portion of small repair contracts on hand he has just been awarded the plumbing contract in connection with the Church of the Epiphany. Mr. Wingate's youngest son is serving Uncle Sam "somewhere in France."

The Graham-Jackson Plumbing Co. has moved its establishment from 28 to 24 Luckie Street in this city.

J. G. Hamm, proprietor of the Independent Plumbing Co., of 40 South Pryor Street, is on record as fast making himself felt as a factor in the plumbing field in this city.

Wynne Plumbing & Heating Co., of this city, has been awarded the plumbing contract on the Federal Regional Bank building, now being erected on Marietta Street.

The Landers Plumbing & Heating Co., of which D. N. Landers is general manager, is reported to be having the top notch of success in securing contracts, having on its books contracts for plumbing the Dunbar-Sewell Apartments, the Miller Apartments, the Southern Oakland Mobile Co.'s new home and the Wylie Building.

Pennsylvania

Philadelphia and Vicinity.

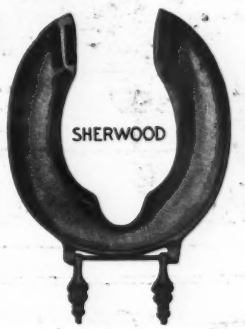
E. T. Shollenberger, of Hamburg, has been awarded the plumbing contract on the new Chester High School, at Chester, the consideration being $25,600. The American Heating Co. secured the contract for the installation of heating and ventilating systems, at $36,500.

J. Mallo, of Fourth and Master Streets, has been awarded the contract for installing the plumbing and heating systems in the property at 1316 North Fourth Street for H. Brody; consideration $950.

William Anderson, of 2017 Sansom Street, has been awarded the plumbing and heating contract on the new

Will Last a Lifetime

SHERWOOD
Aluminum
Closet Seats



are break-proof, never wear out or come apart.

Strictly sanitary. Easily kept clean with soap and water.

Explain to your client the advantages of the SHERWOOD and he will want it.

Made in a number of styles.

A winner for the plumber.

Write for Illustrated Literature

Sherwood Brass Works
1167-1175 Jefferson Ave., East
Detroit, Mich.

Largest Manufacturers of Aluminum Tanks and Seats in the World

Different from Ordinary Fittings

When you use a Detroit Malleable Iron Fitting, you have a light fitting, which at the same time has great tensile strength.

Uniform Standard Non-Porous

Will not leak air

Guaranteed for 150 lbs. steam working pressure.

We also make a high grade line of Valves for Steam, Water, Air and Gas.

Write for Catalog.

Detroit Valve & Fittings
and
Detroit Brass Works
DETROIT, MICH.

VICTOR

Double Drainage Shower Traps and Drains

Feature No. 6

Drainage holes in bushing are cast in brass, preventing their closing from rust and corrosion.

If your jobber does not carry Victor Traps, mail your order to us.

The Victor Brass Mfg. Co.
CLEVELAND OHIO

"Quik-Ope"

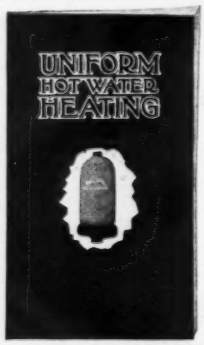
Compression Goods

Most reliable line on the market.

Opens exactly on 1-4 turn. Positive action.
Valve can't work open and leak. The improved stuffing box does the trick.
Made of red metal. Incomparable finish. Triple nickel plated.

Look for the Trade Mark.
Write for latest Catalog.

Made exclusively by
THE HAYDENVILLE COMPANY
Haydenville, Mass. New York City
Established 1845
Makers of Fine Brass Goods



Write for This Booklet

It tells you all about the

Ball Seal Generator

for Hot Water Heating.

This generator increases circulation and radiation. Prevents sluggish, water-logged conditions. Reduces fuel cost. Operates without noise. No attention needed.

Just what you want for that next job.

The Ball Seal Generator Co.
Easton, Pa.

MARVEL

"2 in 1"

Adjustable Shower Trap

embodies the double drainage principle.

Used by most discriminating plumbers. The trap you will prefer after giving it a trial.

Cast iron, black or galvanized. Tapped 2-in. iron pipe.

We make a complete line of the famous MARVEL Traps.

Order from your jobber.
Made by

DETROIT MARVEL BRASS MANUFACTURING CO.
326-332 Rivard Street, Detroit, Mich.

Bell Telephone Building, which is being built in Camden, N. J.

Geo. W. England Estate, of 243 South Fifth Street, has secured the plumbing contract in connection with the Wills Eye Hospital.

George Wismer, of 523 North Fortieth Street, is installing a new plumbing system in Millard's Department Store on North Thirteenth Street in this city .

Grant Jenkins, of Lansdale, is installing the heating system in a farm residence in Colmar.

W. R. Choice, of Landsdale, who engaged in the plumbing business about a year ago, is moving to larger quarters, at 15 West Second Street, in that town.

New Jersey

W. P. Harris, of Warren Street, Newark, is doing the plumbing work in J. Wiss & Sons Co.'s factory addition on Littleton Avenue.

John H. Cooney & Co., of Harrison, have secured the contract for heating and ventilating work in the new additional buildings at the Jersey City Hospital.

W. W. Farrier & Co., of Jersey City, will do the plumbing work in the main hospital building of the Jersey City Hospital, and E. H. Moore, of Jersey City, will do the plumbing in the nurses' home.

C. Strebinger's Sons, of 410 Morris Avenue, Newark, are doing the plumbing and heating work in a new residence on Parker Street for E. C. Meyer.

Master Plumbers of Paterson, N. J., on the Pier on Coney Island.—From "Domestic Engineering" Photo, taken last Summer.

New York

Buffalo and Vicinity.

The Niagara Macaroni Co., of Buffalo, has decided to install a steam heating system in its $40,000 factory building.

Charles Wilcox, of Niagara Falls, has been awarded the plumbing and heating contracts on the $10,000 residence being erected on Fourth Street, in that city, for R. Max Eaton.

Elderfield-Hartshorn Co., of 40 Falls Street, Niagara Falls, has been awarded the heating contract in connection with the new manufacturing building owned by the Glasbury Electric Chemical Co., of that city.

The Powers Efficiency Corporation, of Buffalo, has secured the heating contract on the $40,000 parochial school which is being erected at 3031 Bailey Avenue, Buffalo.

F. N. Jones, of 799 Elmwood Avenue, Buffalo, has secured the plumbing and heating contracts for the new

drug store at Elmwood Avenue and Breckenridge Street owned by W. A. Kendall.

Volz-Secord Co., of 39 Jackson Street, Batavia, has been awarded the contract for the heating installation in the $25,000 store and office building being erected at the corner of Main and Jackson Streets in that city, by F. W. Woolworth Co., of 233 Broadway, New York City.

Charles E. Eisels, of 2342 Seneca Street, Buffalo, has secured the contract for installing heating systems in five residences being built by Maher Development Co., of Buffalo.

Evans, Almirall & Co., of 1 Dominick Street, New York City, have been awarded the heating contract on the new machine shop and boiler house on Vulcan Street, Tonawanda.

Edward Joy Co., of Syracuse, has been awarded the contract for the plumbing and heating installations in the Express Building in Buffalo, owned by the New York Central R. R.

P. H. Carter, Lion Street, Dunkirk, has secured the plumbing and heating contracts on a store and apartment building being erected at 409 Lion Street.

Bids are being taken on the heating contract on the new St. Clements Episcopal Church at the corner of Sussex and Grider Streets, Buffalo.

William Brown, of 71 North Broadway, Yonkers, has secured the contract for installing plumbing in the addition to Public School Number 16. F. C. Sanborn, of 306 Woodworth Street, will install the heating.

Stephen Bradish, of Woodhaven, L. I., will install heating systems in ten new residences on Diamond Avenue, Richmond Hill, for Gatehouse Bros.

Massachusetts

La Gasse Bros., of Fall River, have the contract for heating, and J. F. Johnson Co., of Central Falls, R. I., the contract for plumbing in a new theater building being erected on South Main Street, Fall River, for A. A. Spitz. The building will cost $200,000.

The firm of Gallagher Bros., plumbing and heating contractors, of 413 Centre Street, Newton, has been dissolved. Henry P. Gallagher will continue the business under the same firm name.

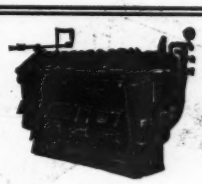
The foundation has been laid for an automobile service station on Central Street, Winchendon, for the Gardner Automobile Co., the heating system for which will be installed by the Royal Steam Heating Co., of Gardner.

Bids have been received by Building Commissioner Walter R. Forbush, of Newton, for a new building to be erected on Crafts Street, Newtonville, for the city forestry department. Pierce & Cox, of Boston, were the lowest bidders for the plumbing and heating, at $2,497.

Fred Metell, who conducts a plumbing business at Oak Bluffs, has purchased a building on Circuit Avenue, in that town, which he is remodeling for his own use. The street floor will be used for his plumbing establishment and the upper part of the structure as a dwelling.

The Svenson-Lindstrom Heating & Engineering Co., of 142 Green Street, Worcester, has the contract for heating a new house, being erected at 20 Brownell Street, in that city, for H. W. Truison. The plumbing will be done by T. J. McManus, of 128 Millbury Street.

Plans for the proposed warming house and convenience station at Buttonwood Park, New Bedford, a great skating resort, are rapidly maturing. An architect has been employed by the city council to prepare drawings, and, if they are acceptable, work may be started very soon.

ECONOMY  EFFICIENCY

This is a
Pierce Down Draft, Magazine Feed, Smoke Consuming, Heating Boiler
Saves Fuel Labor
Manufactured only by
PIERCE, BUTLER & PIERCE MANUFACTURING CORP.
Brooklyn Boston Worcester — NEW YORK — Syracuse — Philadelphia Baltimore Washington

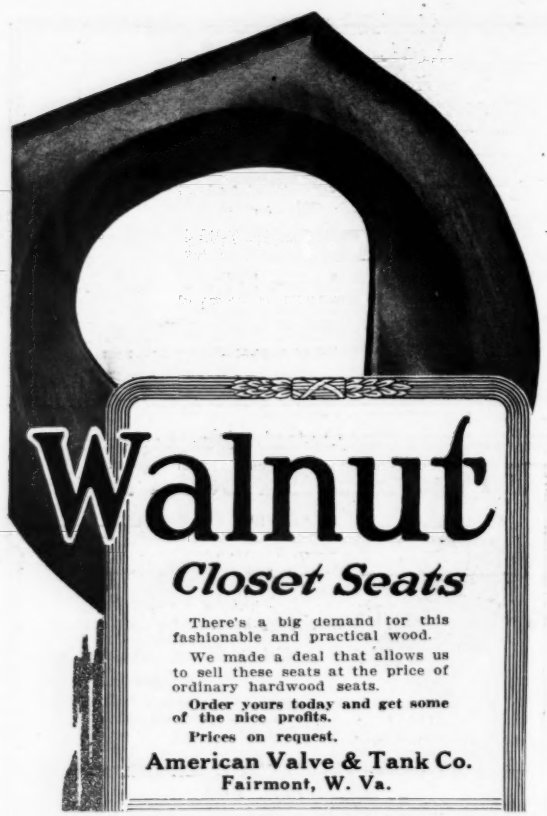
Eagle All Lead Roof Flange

LEAD PIPE: Length, 6 inches; Diameter, 4½ inches; Made in Angles, 45 deg., 22½ deg. and Straight.
SIZE OF APRON: 15 inches Square
No Caulking To Be Done
Joints Lead-burned—No Solder Used
Flexible Adjustable Economical
Write for Circular and Prices.
Manufactured only by
The Eagle-Picher Lead Co.
CINCINNATI, OHIO

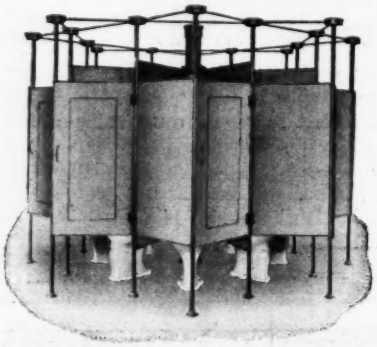
The DUNHAM VAPOR HEATING SYSTEM
Highest radiator efficiency.
Low operating cost.
A controlled heat—automatically raised or lowered at desired hours.
Steam waste stopped permanently by the famous Dunham Trap.
Write for Bulletin No. 11.
C. A. DUNHAM CO., Marshalltown, Iowa
Branches in all principal cities of United States and Canada

Little Giant Expansion Screw Sleeve

Expansion begins at first turn of screw, and is even and uniform entire length of sleeve.
Does not require pipe sleeve or wedge nut.
Write for prices.
STANNARD MFG. CO. Springfield, Mass.


Walnut
Closet Seats
There's a big demand for this fashionable and practical wood.
We made a deal that allows us to sell these seats at the price of ordinary hardwood seats.
Order yours today and get some of the nice profits.
Prices on request.
American Valve & Tank Co.
Fairmont, W. Va.

We give as reference a few of the users of our



OCTOPUS
Combination and Closets

U. S. Naval Station

Thos. Edison Co., Orange, N. J.
Dupont Co. Standard Oil Co.
Endicott-Johnson Co.

The Endicott-Johnson Co. with repeat orders for our Octopus Combination now have 750 closets in use, with Valves "Eternal." Average cost for repairs one cent per year. Guaranteed for life.

SEND FOR CATALOG

THOS. KELLY & BROS.
402-414 So. Kolmar Ave. Chicago

Twenty years of successful business is the record claimed for Thomas Gregory, a leading master plumber of New Bedford. It is said that Mr. Gregory has done plumbing work in 80 per cent of the dwellings in the West End section of New Bedford, where he has his headquarters.

Contracts for an annex, which is to connect the Cambridge High and Cambridge Latin Schools at a cost of $100,000, have just been let. The contract for the heating and ventilating system went to the Barber Co., of 50 Pleasant Street, Boston, at its bid of $15,200. Other bidders were: James S. Cassedy, of Cambridge, $15,625; J. J. Hurley, Boston, $16,435; Lynch & Woodward, Boston, $16,886; Cleghorn Co., Boston, $17,650; T. A. Ridder & Co., Boston, $17,769; Ingalls & Kendricken, Boston, $17,750.

Michael J. Maher & Co., plumbing and heating contractors, of 816 Main Street, Worcester, sustained a considerable loss by fire November 14th. The fact that someone had plugged the keyhole in the nearest fire alarm box, making it necessary for the police officer, who discovered the blaze, to resort to the telephone to send in an alarm, delayed the arrival of the apparatus slightly. The fire started in a closet in which were stored two gross of steam valves, valued by Mr. Maher at $700, and other supplies all of which were damaged. The loss was covered by insurance.

Ohio

Cleveland and Vicinity.

All members of the Master Steam and Hot Water Fitters' Association of Cleveland received from Edward Bohm, executive secretary, announcements of the lecture of E. P. Roberts, M. E., of Akron, former smoke inspector of Cleveland, held Monday evening, November 19th, at the Cleveland Chamber of Commerce, in consequence of which the meeting was well attended. The association secured the co-operation of the Cleveland Engineering Society, whose rooms were used for the lecture, free of charge. The subject of the lecture was "Fuel Conservation, Smoke Prevention and Scientific Firing." Other lectures will be held later in the winter, the committee in charge of this work consisting of J. C. Miles, chairman; George Nachman, W. B. Van Sickle, Charles Mutton, Mortimer Crowell, Henry Henrichsen and Julius Roemer. This lecture was especially interesting and timely, and is along the same line as the work of public education which the association is carrying out through the columns of the Sunday Plain Dealer, this work being carried out by Secretary W. B. Van Sickle, M. L. Crowell, of the Crowell Smith Co., and Executive Secretary Bohm.

Secretary Bohm came down the other morning and found he had to walk upstairs to his office on the sixth floor of the Arcade. When he got there both light and heat were made evident by their absence. A disastrous fire on Euclid Avenue had buried the engine room in the Arcade in seven feet of water and it was necessary to procure a deep sea diver to go down and turn on the electric switches.

An important feature of the Master Plumbers' Association work in Cleveland is that of making out lists of all odd material in the hands of all members of the organization. These are typewritten and duplicated so that every member has a copy and knows where he can procure certain odd pieces. This is especially of value in these times, when supplies are hard to get, particularly odd pieces.

The plumbing and heating business of the Sanitation Co.,

5726 Euclid Avenue, has been taken over by C. A. Bell, former manager, who will do business under the name of the Bell Plumbing Co., at 10017 Euclid Avenue. The Sanitation Co. was incorporated some years ago with a capital of $25,000 by Edward B. Meriam, Gustine S. Bell, J. B. Waterworth, Cary R. Alburn and Leonard B. Parks.

David Perlick, of 10818 Amor Avenue, has closed the contract for the installation of modern plumbing in 15 residences to be erected at Demington and Scarborough Roads, Cleveland Heights, by P. J. O'Donnell, at a total cost of $225,000.

Curtis & Hardy, of 262 Northfield Avenue, have the plumbing contract for an $8,000 residence, being erected at 2117 Coventry Road, by C. B. Walkey.

The Maskell George Co., of 1451 Prospect Avenue, has secured the contract for installing modern plumbing in two $5,000 houses, to be erected by W. E. Edwards, one at 1526 Orchard Grove Avenue and the other at 1665 Marlo Avenue; also for two buildings for T. J. Cronk, a $4,000 residence at 1746 Woodward Avenue and a $5,000 two-family residence at 1583 Northland Avenue, Lakewood.

J. Kiss, 2634 East 89th Street, has the plumbing contract for two buildings being erected by A. E. Goldman, a $10,000 office building at 8120 Kinsman Road, and a $6,000 four-suite apartment at 2494 East 61st Street.

Plans for the new shop building for the plumbing firm of Warden & Leese have been completed by Architect E. A. Smith, 1527 Williamson Building, and work will be begun in the near future, by the Hunkin-Conkey Construction Co., 321 Cuyahoga Building, which has the general contract. As announced recently, the shop will be erected on Carnegie Avenue on a lot recently purchased, which also fronts at 448 Prospect Avenue. The estimated cost of the new plant is $8,000. It will be one story, occupy the entire Carnegie Avenue frontage of 37 feet, and will be 115 feet long with an average width of 40 feet.

Plumbers throughout the city were pleased at the recent re-election of Charles Kadlecek, of the Kadlecek Plumbing & Heating Co., 5365 Broadway, as councilman from the 13th ward. Mr. Kadlecek, who was elected on the Democratic ticket, is 40 years of age, lives at 5314 McBride Avenue and is prominent in several fraternal organizations.

A. Goldfein, 6912 Carnegie Avenue, has the heating contract on the new $50,000 motion picture theater of the Stork Amusement Co., at West Eighty-fifth Street and Lorain Avenue.

The Wadsworth Plumbing Co., 1425 East Ninth Street, has the contract for remodeling the plumbing in the old Pittsburgh Lunch Room on East Ninth Street.

The plumbing contract on the $7,500 residence for L. Hawthorne, at 2501 Wellington Avenue, Cleveland Heights, has been let to Wehrle & Schmul Co., 13564 Euclid Avenue, and the contract for steam heating to Earl Jones, 11817 Hamlen Avenue.

A. J. Bingham, 1696 East Fifty-fifth Street, has been awarded the plumbing contract on a $7,000 two-family residence for J. G. Heffner, at 2593 Colchester Avenue.

G. E. Preston, 2158 West Thirty-eighth Street, has been awarded the plumbing contract and the West End Hardware Co., 7300 Lorain Avenue, the heating contract on a $5,000 residence for A. Soros at 1305 Adelaide Avenue.

George A. Bennett, 7404 Denison Avenue, has a plumbing contract on a $5,000 residence for the Carl D. Brown Co., at 1581 Warren Road.

A. J. Bailey, 1583 Lakeland Avenue, Lakewood, has the contract for plumbing a $10,000 residence for R. P. Clark, at 1095 Homewood Avenue, Lakewood.

A Lost Star

MANY a man is called to furnish proper garage drainage installation. How many have succeeded in accomplishing the desired result?

Frequently you read an announcement of the sudden death of some prominent man in a garage. **Petromortis did it.**

Our many years of experience in manufacturing scientifically constructed garage drainage installations has resulted in our originating a schedule of capacities of garage drainage installations.

ALL GARAGES are now classified according to the number of automobiles housed.

This schedule, with other valuable information, now appearing for the first time in print, will be furnished FREE TO THE TRADE.

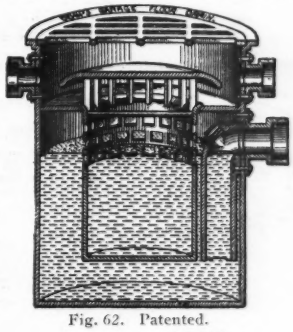


Fig. 62. Patented.

1897 1917

COMPOUND INJECTOR & SPECIALTY CO.

Originators, Designers and Sole Manufacturers of
DEHN'S SANITARY SAFEGUARDS

419-421 N. Laramie Ave., Chicago, Ill., U. S. A.

L. WOLFF MANUFACTURING CO. TRADE MARK. CHICAGO.

Quality Plumbing

L. Wolff Manufacturing Co.

General Offices - 601 West Lake St.
Showrooms - 111 N. Dearborn St.

Chicago

"Safety First"

Equip your Coil Furnace with **Wolverine** Safety Air Valve, prevents Fire, Explosion and possible loss of life.

Furnace Repairs

Complete Line

For immediate shipment see Catalog "H". Order early.

Wolverine Brass Works
Grand Rapids, Michigan

TRADE MARK SIGNET REG. U.S. PAT. OFF.

No More Back Water

where the SIGNET Drain is used.

Keeps basement dry, clean and sanitary. A positive safeguard, either wet or dry, against sewer gas and water.

Brass working parts submerged—works automatically by gravity.

Always works. Always satisfactory.

Write for literature.

CRAMPTON-FARLEY BRASS CO.
KANSAS CITY, MO.

WILHELMI AND MODERN Copper Range Boilers

Unexcelled in design, material and workmanship.

Interior thoroughly tinned.

No iron used in construction.

Guaranteed against collapse.

Always satisfactory. You can safely install them on your best jobs.

Order from your jobber. Made by

Hayes Manufacturing Co.
Paterson, N. J.

TRY BLUE SEAL
AT OUR EXPENSE

This liberal offer is for plumbers who have never used BLUE SEAL. It gives an opportunity to try at our expense the original Money Back Drain Pipe Solvent.

Cut out this advertisement, mail it direct to us with your own address—and your jobber's. We will then send you, transportation charges prepaid, six one dollar cans (2 lbs.) BLUE SEAL

DRAIN PIPE SOLVENT

Use these six cans according to directions to clear waste and drain pipe stoppages. If the Solvent does all we claim for it you are to send us $3.60 (special price for plumbers) within ninety days. If not the trial costs you nothing.

10,000 plumbers now use Blue Seal. Over 300 jobbers stock, sell and recommend it. If you haven't used it, this is your opportunity.

BLUE SEAL CHEMICAL CO.
417 E. 16th St. New York

Indiana

Indianapolis and Vicinity.

Joseph G. Hayes, of the plumbing and heating firm, of Hayes Bros., was captain of one of the teams in the Y. M. C. A.'s local campaign to raise a $250,000 war fund, which closed Monday. Mr. Hayes was unable to lead his team to the finish, being called to Washington Friday on important business for the government.

Freyn Bros. of 31 West Michigan Street, Indianapolis, have been awarded the contract for the installation of the plumbing and heating in the new passenger and freight depot that is being erected at Lebanon, Ind., for the Vandalia Railroad Co. The firm also has the contract for the plumbing and heating on the Indianapolis & Frankfort Railorad Co.'s passenger depot and freight house at Frankfort.

Other Cities of the State.

Fred Blaser, formerly in the plumbing and heating business in Goshen but more recently of Elkhart, is installing the plumbing in the pretty home that is being erected there for W. H. Foster. The equipment of the residence is said to be the finest in northern Indiana. The total cost, according to the contractors, may exceed $250,000. Among the features of the house are a stage, a bowling alley, billiard room and several shower baths.

The H. G. Newman Plumbing Co. of Evansville, has been awarded the heating and ventilating contract for the West Side Junior High School building. The contract amounts to $32,716. The system includes automatic regulation and a smokeless boiler.

S. A. Schmitt, of 320 South Sixth Street, Evansville, has received the contract for the installation of the plumbing in the new residence and garage, which is to be erected at 931 Blackford Street, for George Andres.

Theriac & Alliga, of Vincennes, have been awarded the contract to make extensive alterations in the plumbing and heating in the residence of Mrs. Joseph E. Caney, of 314 South Sixth Street, in that city.

A. A. Yarrick, of Argos, was the successful bidder for the plumbing and heating contracts on the new bank and store building now being erected there for the Farmers State Bank. Work will be started in a few weeks.

Victor C. Knauth, of 215 Busseron Street, Vincennes, is preparing to place the plumbing and heating in the $35,000 Carnegie library, being erected at Seventh and Seminary Streets. He is also busy with a number of residence contracts.

Fred Dorsam of Frankfort, has received the contract for the installation of the plumbing and heating in the new freight depot that is being erected there by the St. L. & W. R. R. Co. Mr. Dorsam also has the contract for the installation of the plumbing and heating in the new addition to the Clover Leaf Railroad Co's office building there.

Contracts will be awarded in a few days for the installation of the plumbing and heating in the handsome new motion picture theater that is being erected at Terre Haute by the Merchants Theater Building Co., of that city.

Plumbing and heating contractors of Elkhart were shocked to learn of the death of Nicholas J. Monks, who died at his home there last week, as reported in last week's issue of "Domestic Engineering." Mr. Monks was a victim of a rheumatic ailment which caused his death. He was born in Kendallville, Ind., in 1868 and came to Elkhart in his early youth. He was engaged as a plumber

for Borneman & Sons for about twenty-four years, leaving them about two years ago to go into business for himself. He is survived by two brothers and six sisters.

Kentucky

Louisville and Vicinity.

With the Louisville plumbing and heating trade it is chiefly a question of getting labor at the present time, labor being very scarce while work is heavy. Very little new business in the way of new building installation work, is coming out, but general repair and remodeling work is heavier than ever before known in the fall season, and business is generally good.

The Louisville Master Plumbers' Association met on Monday evening, November 19, to discuss a number of matters, among which were plans for getting the new city administration to arrange for installation of a number of public comfort stations in the down-town or retail district; better representation on the plumbers' board and some legal matters which will come out a bit later.

It is known that the new Republican Administration, which is now going into office, is favorable to the public comfort plan, and it is possible that three or four stations will be established in the down-town district.

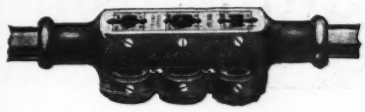
Through the election of the Republican Administration the chances are that the new plumbing board, to be elected under the state plumbing law, will be an open board, and not one in which the union journeymen plumbers control. The Democratic party has always been favorable to organized labor in Louisville, while the Republican ticket has not had the backing of labor, and is not so strong for unionism, being more for the business man. Under a Democratic Administration the union journeymen would have held complete control of the board, as the city plumbing inspector was a union journeyman, while the board is to be made up of two journeymen, to be selected by the inspector, and two master plumbers. This would have given the journeymen control of the board at all times.

Figuring on this situation the Louisville Master Plumbers' Association has adopted resolutions and recommended two men to the administration, R. O. Dusch, a Republican worker and a member of the association, for plumbing inspector; and H. V. Nonkofsky, as assistant inspector. A petition has been gotten out and signed by the members of the association, and by a large number of the most prominent local business men, calling for the appointment of these men.

These two men will work in harmony with the administration, and with the master plumbers' organization, and see that the drastic plumbing law is not made drastic in its effect on local business other than that all journeymen will have to stand a fair examination, and that they will all have to be licensed.

Louisville has never had any real labor troubles, and only about 20 per cent of the 135 shops in the city are closed shops. If the plumbing law had gone into effect under the old administration, it would have meant that the city would have become a closed shop town. This has been one of the objections to the enforcement of the new state law, which goes into effect next month, although passed by the 1914 legislature. This law was beaten by the association in the police court, the circuit court, the county court and went to the Court of Appeals on three occasions.

The change in politics locally will probably mean that



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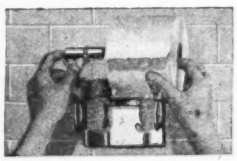

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the law will not be drastic in its effect, and that the master plumbers will have no further complaint to find with it, it having been merely a question all the way through of obstructing the attempts of the union journeymen to effect a closed shop town, the original bill, introduced into the legislature, having been introduced by the union journeymen for this very purpose.

F. A. Clegg & Co., of 111-13 South First Street, Louisville, have just completed the heating installation in the hospital unit at Camp Taylor, near this city. This contract called for the installation of 90,000 square feet of radiation and 1,600 radiators. This work was completed in about 55 days. The power house is located about a mile from the last building and there are eight 150-horsepower boilers for the heating of the hospital unit. This is said to be one of the largest and quickest jobs ever installed south of the Ohio River. The Clegg concern has been praised for doing it so quickly Two hundred and fifty men were engaged on this work for several weeks. This concern is at the present time installing heating systems in an addition to the American Tobacco Co.'s plant, as well as in the railroad station at Berea, and it is also doing the heating in Mrs. F. Stalling's residence in this city, a $4,000 job.

Benjamin B. Watts, prominent master plumber of Louisville, was elected tax receiver of Louisville by a wide majority on the Republican ticket, in the fall election, while Robert Lucas, son-in-law of C. F. W. Lasch, master plumber, was elected prosecuting attorney with ease.

J. H. Burwinkle, who has been ill on and off for the past several years, and forced frequently to go to various springs for relief, is seriously ill at his home, and his recovery is very doubtful. His son, Carl Burwinkle, has been handling the business in a highly efficient way for several months, having been associated with his father since leaving school.

F. S. Schardein & Sons Co. recently went to the open shop plan, following disagreements arising among the men in connection with the employment of non-union men on the cantonment contract, when George Schardein was superintendent of the construction work. The government stands for no closed shop work, and regulates things so that all workmen are given an equal chance. The journeymen endeavored to ride over, however, and fell out with Schardein.

Haller & Zehnder, local plumbers, continue busy, and are handling a large amount of new work this season. At the present time the firm has contracts for Rommell Bros., Jackson and Broadway; the St. Xavier College, and on remodeling the Barrett property at 418 West Main Street, all of these contracts calling for installation of numerous fixtures.

Other Cities in the State.

Fleenor & Houk, of Bowling Green, plumbers and steam fitters, who for the past four months have been busy at the Atlanta and Louisville cantonments, are back on the job again, and have re-opened their establishment at 422 Tenth Street.

The Estill Water & Gas Co., of Irvine, in the new oil district of the state, is completing water mains, and will be in operation by January 1. Water will be supplied to Irvine and also to Ravenna. Forty water plugs will be furnished by the city. The company will also install a filtering plant, which will be operated with electric pumps. This company is capitalized at $25,000. Its officers are: C. Marcum, president; O. W. Witt, vice-president; James A. Wallace, secretary-treasurer, and H. L. Leete, superintendent.

Kansas

The contract for the installation of the plumbing system in a public school, to be built at a cost of $25,000, at Denison, has recently been awarded to the Kennedy Plumbing Co., of Lawrence. It is expected that work will be started soon upon this building. The contract for the heating has not yet been awarded.

The Bingham Plumbing & Heating Co., of Argentine, has just been awarded the contract for the installation of the heating system in a store and apartment building, to be erected at a cost of $10,000, in that city. The owner is Mrs. E. L. Depue, of 3416 Strong Avenue. The work will be started at once.

Obituary

J. C. Heesch.

J. C. Heesch, who had been engaged in the plumbing business for many years at Salt Lake City, Utah, died recently at his home in that city in his sixty-sixth year from a stroke of paralysis. Mr. Heesch was one of the first plumbers to open an establishment in Salt Lake City. His wife, one son and two daughters survive him.

Ira A. Mann.

Ira A. Mann, of Pittsburgh, Pa., well known as a master plumber and as an inventor of a number of sanitary specialties, died suddenly on October 29th, at the Athletic Association club house in that city. Heart disease was the immediate cause of his death, which occurred while he was visiting at the club in company with his wife. Two days after his decease the Master Plumbers' Association of Pittsburgh, of which he was president, met in special session and passed memorial resolutions, which were unanimously adopted. Mr. Mann was born at Ionia, Mich., in 1870. His early education was obtained in the local grammar and high schools. Soon after leaving school, he entered the ranks of the plumbing fraternity as an apprentice, and in the year 1896 he arrived at Chicago as a full-fledged journeyman, remaining here about four years and working at the trade in different parts of the city. In 1900 he went to Pittsburgh, where he pursued his journeyman activities for another three years, until, in 1903, he started in business for himself in that city. As an inventor of sanitary specialties he made a signal success. Among the results of his inventive mentality were the wall-outlet clinic sink for hospitals, the first of which came into use about five years ago, a wall-outlet closet and also a wall-outlet lavatory, etc. During his career in business he contributed much to the science of plumbing in the realm of invention and in technical articles of interest appearing in the trade papers.

The Late Ira A. Mann.

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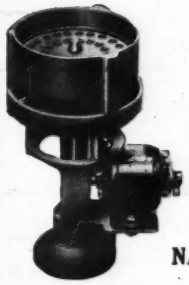
Your Customers Want This Novel Device



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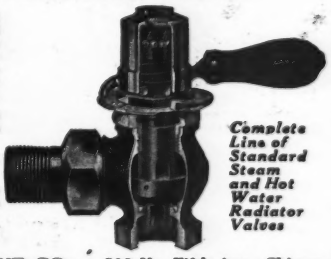

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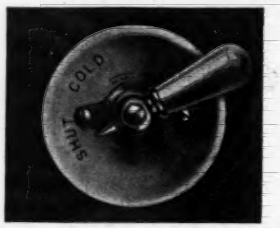

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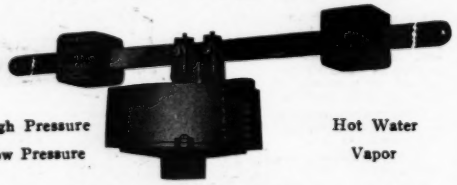

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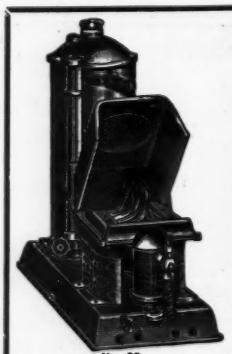

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SOLVING THE TOOL QUESTION IN THE PLUMBING AND HEATING BUSINESS.*

By H. S. Ashmun.**

THE war has taught us the true meaning of the word efficiency. It has brought home to us the great waste that comes from dubbing along from day to day, without adequate equipment and without careful planning. It has shown us the benefits of co-operation, the value of the interchange of ideas and it has proven beyond question that a little foresight is worth a lot of hindsight.

The manufacturers of this country are learning the meaning of the word thoroughness. They have come to understand the economy of standardization. It has opened to them a wide field for improvement, which they have not been slow to take advantage of.

One not intimately connected with this phase of our industrial life cannot conceive the peaceful revolution that is going on in the factories of our country.

Just as the mechanical and electrical engineers are taking to heart this lesson that is being written in gunpowder and blood, those of us who call themselves sanitary and heating engineers, should learn this big lesson in efficiency, that is daily being brought home to us.

This lesson is one of accuracy, thoroughness, careful planning and standardization.

During the past decade we have seen the cost of labor increasing along side of the shortening of the working hours, until, at the present moment, time has become the vital factor in estimating.

The constant effort is to gain time—to plan to make work move along more quickly. Anything that will quicken the men or simply their work finds "welcome" on the mat. Every one is on a still hunt for the elusive short cut.

While the hours of labor have been shortened and its price lengthened, you have not been idle; quicker and better methods have been devised; you have not all been running Rip Van Winkle a close second; but how about your tools?

How many of you have given them the time and attention that their importance in your work, as a time saving or time wasting factor, entitles them to?

Honestly, don't you usually say things when you hear someone say "tools." Isn't it a fact that you have often wished that there was some way to carry on your business without them?

What's the use? It can't be done. While the sons of Jacob were able to make, for their Egyptian masters, bricks without straw, your men cannot cut threads without stocks and dies.

The kind of tools that you supply to your fitters, their quality and condition, their newness and state of repair, is an important factor, to be carefully considered, if you want to increase the profit on your jobs.

How much inspection are the tools given in the average shop before being sent out on a contract? Many master plumbers have said to me: "If my tools are not right, the men'll kick." And they do, lots of times. But why wait for the kick. How much more economical it would be to anticipate the complaint.

You pay for the wasted time. You pay for the slow-

*Excerpt from Address delivered before the Master Plumbers' Association of Boston and Vicinity.

**Manager of the Pipe Tool Department of the Greenfield Tap and Die Corporation.

ing up of the work. And besides lots of journeymen never kick. They are well satisfied that they have so good and convenient an excuse for slowing up.

You cannot and should not rely on your men to inspect and report on the condition of your tools.

It's up to you to inspect your tools or see that they are inspected before they go out to the job.

The proper upkeep of tools costs a lot of money, but not nearly as much as time. Repairs can be bought, worn-out tools replaced, but time, that is gone, is gone forever.

And to save time, do you ever send duplicate parts to the job, to anticipate trouble? Certainly some of them may be stolen, but so is brass work, and you have to chance that. Even to lose an occasional die is less costly than to have to stand the waste of having your fitter swap stories with the electrician while he waits for his helper to go to the shop or supply house for a new die. There is not much economy in that.

It is a usual thing to hear a master plumber complain because his men don't clean up their kits. Right here is where we disagree. It isn't the fitters' job. It's your job to see that it's done for them. You pay them too much to want them to do this.

In our office, we won't even permit one of our stenographers to sharpen a lead pencil. It wastes too much of that expensive stuff called time. Never before have we come so sharply to realize that time is money. Every night the girls put on their desks enough pencils to last them a day, and in the morning the pencils are ready for them, all sharpened.

We have found that we can sharpen them cheaper by machine. Now there is no good reason why you cannot have some one clean, check and inspect your tool equipment for less money than the price of a journeyman fitter.

Cleaning and inspecting are not difficult, especially if your shop is standardized, and by all means standardize. It is not an easy thing to tackle, but my it's wonderful the saving that it shows when the job is done. Think it over.

Repairs can be anticipated. You can afford to carry them in stock and save the cost of sending each time to a supply house for a repair, and occasionally you will avoid that aggravating delay of waiting till the part you need is procured from the manufacturer. Standardization pays. It pays big.

A great deal of our happiness or misery in this little life of ours depends on our point of view. You see a swell shape up the street and it looks like a million dollars; you quicken your step and pass her; she's nearly sixty and you feel like thirty. It's all in the point of view. You land a contract, a whopper, for $10,000, and you swell right up. You are as happy as a mosquito on a fat man's bald head. Your best friend comes in, and you tell him what a great man you are, and how many limousines you are going to buy with your profits. He looks you over, hesitates and tells you that he is your friend, that he wouldn't hurt you for the world, but he slips you the information that the contractor robbed his parents to get a start in life, skinned his partner before he was twenty-seven and goes through bankruptcy every July for his summer vacation. In a minute you'd sell your contract for a lead quarter, and it looks like rain. The contract still lies folded on your desk. It has not changed one iota. It's all in the point of view.

That's the way it is with your tools. They are a great expense. They're always getting lost. They wear out. You can't get good ones any more any way, not for love

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ADSCO SYSTEM

With the ADSCO Graduated Radiator Valve and the ADSCO Regulator.

and Be Assured Greater Success without any radical change from your past methods.

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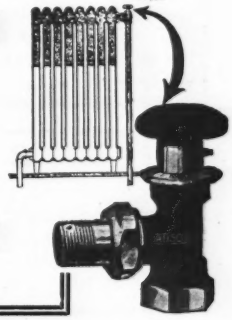

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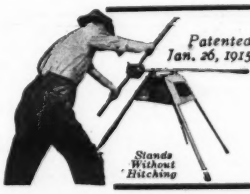

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The standard for 30-40 gal. boilers, and single coil heaters or equivalent. Has ⅜-in. gas openings.

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"The Sanitary Way"
Shake a little into bowl, let remain a few minutes, then flush. Leaves bowl and trap free from stains and odors. K-K is scientifically prepared for this purpose only—not a general cleaner.
Keep a supply on hand—your trade wants it.
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Use "Desolvo" for Cleaning Clogged Pipes

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You can keep Pump noise out of your home by keeping out the kind of a Pump that makes a noise.
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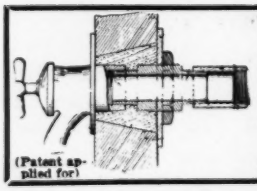

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is a practical device for laundry tray improvements. Easily attached. Holds bibb in place by nut and washer arrangement. Leak-proof. Saves time and money.
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nor money. Tools are a nuisance. If you could only do business without them. But you can't. So you might just as well make the best of it and change your point of view.

For years tools have been considered an annoying item of overhead. Every time I call on a friend plumber and say "tools" to him he acts as though I was collecting for "The Lives of Our Presidents" in twenty-nine volumes, a dollar down and pay for three generations. Right now, if I were to spring on you a tool that was the one best bet, mighty few of you would volunteer to try it.

Of course not, you have trouble enough as it is, and besides it would increase your overhead—deadly word. How many times it has stood in the way of a contractor giving his men adequate equipment, though he well knew that better tools are a decided economy in the long run?

Now it is a matter of common understanding that tools are the bogey of the craft. Every man that's a real man, loves good tools. Every contractor wants his men to have the best there is. All of us have learned that better time can be made and operating costs reduced with good tools. And a few of us have learned about fatigue poisons. The toxin that is formed from burnt muscle tissue, which lowers our vitality and finally puts us to sleep. It's well worth looking into.

Now if you are as anxious, as Jane is while Charles is talking it over with father, to give your men the best there is, why not? Because you want to be the little Russell Sage with your overhead. "Keep it down" is the watchword.

When you are preparing an estimate, you know that you can figure your labor and material with anyone that is bidding on it. You know that you can buy enameled ware as cheaply as the next man. But it's the awful uncertainty of that percentage, which is added on as overhead and profit that brings out the cold sweat and makes you wish you had first consulted Swami Swastika, the seventh son of a seventh son, crystal gazer and reader of the past, present and future.

You can change this, change every bit of it, so far as your tools are concerned, if you will change your point of view. That's all there is to it, just a wrong point of view. Change it!

How? I'm going to try to tell you in words of one syllable. Put the cost of your tools, repairs and replacements in your estimate. You can do it. You know pretty well that after a job is finished that the stocks will need new dies, and what they will cost. Figure them in as material and not as overhead, then you can afford to do all that you feel that you should do to keep up your tool equipment.

According to the size of the job, estimate just how much it will set you back to keep the men supplied with tools that are efficient. That's all. Put your tools in as material. Change your point of view and you'll be glad to keep the kits in good condition. This is nothing new in other lines of business. When you buy printing, the printer charges in the plates. You put into your jobs the wear and tear of your tools, just as you put in solder or oakum. Why not figure them in? If you are going to wear out $5 worth of 2-inch dies, that is material.

Your perishable tools should be estimated as part of the material. They perish on the job. Knowing this, if you will figure your tools in with your other materials, the bogey of tool expense will be laid; and if you will just screw your courage to the sticking point and do this, then you will learn that the best is at all times none too good, when it comes to bringing home the bacon.

PAID IN FULL.

By Guido D. Janes.

WITH one bill six months past due and the kitchen sink job yet unpaid for, Hard Tack Simpson was making life unpleasant for Smith. Bill after bill mailed to the delinquent fell like water off a duck's back, and bill collector Jones was treated rudely every time he endeavored to interview Simpson in regard to the matter.

Things went on this way for a long time, until the plumber interviewed his unbalanced books, and both came to the decision that sterner measures must be adopted, if the money was to be forthcoming.

"It is $20 that is due us," remarked the books advisedly, "and added to this the stamp dunning bill, interest on the money, trouble and worry bring it up to $22."

"My blood is boiling at the same temperature that solder melts at." growled Smith. "Blamed, if I don't go personally to this leech and demand a full settlement. If I don't collect it, the statute of limitations will."

So putting on his new hat he walked out of the office and through the stock room, where Plumber Bill Freitag was getting a lavatory.

"Watch me get it out of Simpson," he said. "I will come home either on my shield or with it. So long."

"So long, but I fear for your safety. I have heard of that man and he used to work in a brass knuckle factory. Play safe."

"Don't fear, I got my start myself in a brass foundry"

So he left the locality. But half an hour he returned rather unexpectedly, when the new Red Cross ambulance backed up before the plumbing shop and unloaded what was left of Smith. They carried him in on a stretcher, and, by instinct, Freitag grabbed the first aid to the injured box and came to the rescue. But it was not needed.

"Well, I got my money out of the ambulance anyhow," Smith said, coming to for the first time. "I gave $5 toward it. But my that chap Simpson is some belligerent. I will tell you more shortly."

At this point the telephone rang. It was from an old man living near Misers Station, that held on to his wheat and sold it for a fortune. "I want plumbing put in my house, hot, cold, tepid and luke warm water. Also a bath tub, a sink and a sewer. Do the job and don't spare the expense."

"Put me on the job," said Freitag coyly. "I'll collect the Simpson bill too."

"Go ahead."

So after specifications, plans, etc., were drawn up, the two-horse wagon was filled with fittings, tools, tubs, etc., also Freitag and two helpers and the whole bunch headed for Misers Station.

Misers Station was off the railroad, off the beaten highway, off the map and as far back in civilization almost as ancient history. So many friends bade them farewell, as they journeyed away.

Half way to the destination, Freitag procured a dozen empty soda bottles which he had secretly hidden in the wagon and began to distribute them in broken lots along the right of way.

"What's the significance of this?" asked a journeyman. "No Mexicans will invade the country by this route, and spies don't shy at glass."

"I know that, but there are people in this country about as ornery as spies and Mexs."

Finally the old man's house was reached, and they got

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GOETZ BRASS COMPANY Manufacturing Specialists
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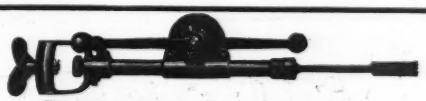

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not only cuts and threads pipe perfectly, but cuts your labor costs as well. Requires about one-third the time spent on hand work. Can be used either in the shop or on the job. Light, simple, compact, durable.
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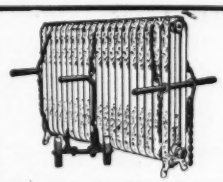

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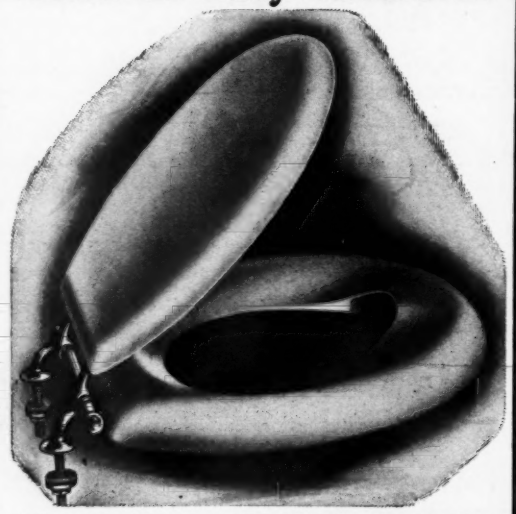

Pfau White Seats are constructed with a long dowel in each tongued and grooved joint, making a joint which we guarantee against splitting. Every Pfau White Seat is equipped with the long white rubber bumpers, which were originated by The Pfau Manufacturing Company. The hinges are of highest grade nickel-plated cast brass, or can be finished with the celebrated Pfau White, to match the woodwork.

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busy installing the plumbing. About four-thirty they quit work and drove back to town. All went well until the team brought them to the apex of a small grade five miles out, when a dozen soil pipe's length ahead they saw no other person than Hard Tack Simpson and his entire family in the automobile. All four tires were down, while the evening sun jokingly reflected its rays on the broken particles of the soda bottles, which Freitag had distributed there in the morning.

Seeing this Freitag's presence of mind covered up the name of "Smith & Co., Plumbers," by hanging his coat over the side of the front seat, and drove up to the wounded automobile.

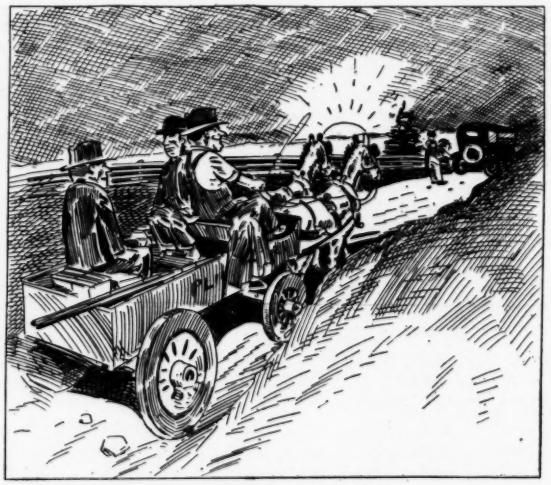
"I am the first aid to the injured," laughed Freitag. "I feel sorry for you and will be only too glad to haul you to town."

"Thank you, my good man," said Simpson. "What are your rates?"

"Twenty-two dollars."

"Robber and thief."

"I beg to differ with you," interposed the plumber good naturedly. "This road is bad, feed is high, one of my



"Hanging His Coat over the Side of the Front Seat, He Drove up to the Wounded Automobile."

horses is blooded stock, and axle grease has gone up 10 per cent since the first of the month."

"Yes, dear," said Mrs. Simpson. "The fellow is right. Twenty-two dollars is not too much. And dearie, I must be back in town by seven for I have to go to the Hardwick reception."

"All right, I will pay the money, but I still think the price is beyond reason."

So they hooked on and drove to town.

"I collected the money," laughed Freitag an hour later, breaking into the office. "Here it is," and he came across with the $22. "I collected it as a wolf would in sheep's clothing."

"Well, you are some plumber," ejaculated Smith beside himself with joy. "Wait till I faint and then I will reward you." Whereupon Smith fainted.

"Now I will reward you," he said coming to in a few minutes. "I will invite you up to my house to take Sunday dinner."

"What is the hour you serve it?"

"One o'clock sharp. And be sure to be there for my wife is rather nervous after the stated time."

"All right, sir. I'll be there. Thanks."

NEW ILLINOIS LAW FOR LICENSING OF PLUMBERS.

The state of Illinois recently passed a law providing for the licensing of plumbers and for the supervision and inspection of plumbing, and providing penalties for violations. The new law repeals the law entitled "An Act to Provide for the Licensing of Plumbers and to Supervise and Inspect Plumbing," approved June 10, 1897, and in force since July 1, 1897, and all amendments thereto, and all acts and parts of acts inconsistent herewith. The new law is worded as follows:

Persons Working as Plumbers to Receive Certificates.

Section 1. Be it enacted by the people of the state of Illinois, represented in the General Assembly, that any person now or hereafter engaging in or working at the business of plumbing in this state, either as a master plumber or employing plumber or as a journeyman plumber shall first receive a certificate thereof in accordance with the provisions of this act.

Section 2. Any person desiring to engage in or work at the business of plumbing either as a master plumber or employing plumber or as a journeyman plumber, shall make application to a board of examiners, hereinafter provided for and shall at such time and place as such board may designate be compelled to pass such examination as to his qualifications as said board with the approval of the Department of Registration and Education may direct; said examination may be made in whole or in part in writing and shall be fair and impartial and of a practical and elementary character, but sufficiently strict to test the qualifications of the applicant.

Section 3. That there shall be in every city, town or village of 10,000 inhabitants or more, a board of examiners of plumbers, consisting of three members, one of which shall be the chairman of the board of health, health officer, or commissioner of health as the case may be, who shall be ex officio chairman of said board of examiners; a second member who shall be a master plumber and a third member who shall be a journeyman plumber. Said second and third member shall be appointed by the mayor and approved by the city council or city commissioners, or board of trustees of said town or village, within three months after the passage of this act for the term of one year from the first day of May in the year of appointment and thereafter annually before the first day of May and shall hold office until their successors are appointed and shall be paid from the treasury of said city, town or village, the same as other officers in such sums as the authorities may designate.

Section 4. Said board of examiners shall, as soon as may be after appointment, meet and then designate the dates and places for the examination of all applicants desiring to engage in or to work at the business of plumbing within their respective jurisdiction. Said board shall examine said applicants as to their practical knowledge of plumbing, house drainage and plumbing ventilation and if satisfied of the competency of such applicant shall thereupon issue a certificate to such applicant authorizing him to engage in or work at the business of plumbing, whether as a master plumber, employing plumber, or as a journeyman plumber.

The fee for a certificate for a master plumber or employing plumber shall be $50; for a journeyman plumber the fee shall be $1. Said certificate shall be valid and have force throughout the state for a period of one year from the date of issuance and may be renewed upon its expiration by payment in advance of an annual renewal

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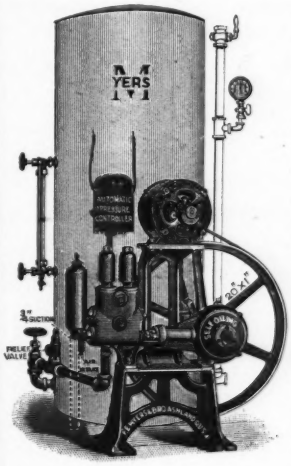
SELF-OILING ELECTRIC HOUSE PUMP



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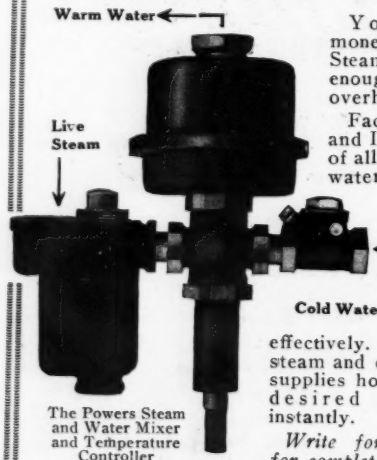

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fee of $10 for the certificate of a master plumber or employing plumber and the payment in advance of annual renewal fee of $1 for the certificate of a journeyman plumber. All certificate and renewal fees received for said certificate to be paid into the treasury of the city, town or village where said certificate is issued: Provided, however, that all such persons residing outside of a city, town or village, having a board of examiners of plumbers shall pay their fees for renewal to the Department of Registration and Education as provided in Section 6 of this act.

Section 5. Each city, town or village in this state having a system of water supply or sewerage, shall by ordinance or by-law within three months of the passage of this act and with the advice of the Department of Public Health, prescribe rules and regulations for the materials, construction, alteration and inspection of all plumbing and sewerage placed in or in connection with any building in such city, town or village; and the board of health or proper authorities shall further provide that no plumbing work shall be done except in case of repairing of leaks without a permit being first issued therefor and upon such terms and conditions as such city, town or village shall prescribe.

Section 6. All persons who are required by this act to take examinations and to procure a certificate as required by this act, shall apply to the board of examiners of plumbers in the city, town or village where he resides: Provided, however, an applicant residing outside of a city, town or village having a board of examiners of plumbers, shall apply to the board of examiners of plumbers, nearest his place of residence: Provided, however, that all such persons who reside outside a city, town or village having a board of examiners of plumbers, shall apply to and receive his renewal certificate from the Department of Registration and Education, and he shall pay the renewal fee as provided for herein, to the Department of Registration and Education. All fees received by the Department of Registration and Education for such renewals shall be paid into the state treasury. It shall be the duty of such board of examiners of plumbers in such cities, towns or villages, to furnish the Department of Registration and Education with the name and address of each person who may apply or to whom it has issued a certificate, or a renewal certificate within thirty days from the date of issue of said certificate.

Section 7. It shall be the duty of the Department of Registration and Education to see that the provisions of this act are enforced. The Department of Registration and Education shall have the power by and with the advice and acquiescence of the attorney general of this state to institute mandamus proceedings in the name of the people of the state of Illinois, against the officers or corporate government of any city, town or village in this state which does not comply with the provisions of this act to compel the observance of these provisions. The State Department of Registration and Education may also institute and prosecute suits for the recovery of any penalty provided for in this act. The attorney general shall assist in instituting and prosecuting all such proceedings upon application of the State Department of Registration and Education.

Section 8. Any person violating any provision of this act shall be guilty of a misdemeanor and be subject to a fine of not less than five dollars ($5) nor more than fifty dollars ($50) for each and every violation therefor and whenever such person has a plumber certificate the same may be revoked by the Department of Registration and

Education: Provided, that no certificate shall be revoked before the holder thereof has been given reasonable notice of the charge against him and an opportunity for a full hearing before the Department of Registration and Education. For the purpose of conducting such hearings the director of registration and education shall appoint three competent, reputable and licensed plumbers The action or report in writing of a majority of the persons designated, shall be sufficient authority upon which the director of registration and education may act.

Section 9. An Act entitled, "An Act to provide for the licensing of plumbers and to supervise and inspect plumbing," approved June 10, 1897, in force July 1, 1897, and all amendments thereto and all Acts and parts of Acts inconsistent herewith are hereby repealed: *Provided, however,* that any certificate heretofore lawfully issued entitling the holder to engage in or work at the business or trade of plumbing in this State shall during the unexpired period for which such certificate was issued, serve the same purpose as the certificate provided for by this Act.

And, provided, further, that the provisions of this Act shall not apply to plumbers regularly employed by any common carrier engaged in interstate commerce, and engaged exclusively in work on the premises of such carrier.

Filed June 29, 1917.

This bill having remained with the Governor ten days, Sundays excepted, the General Assembly being in session, it has thereby become a law.

Witness my hand this twenty-ninth day of June, A. D. 1917.

Louis L. Emmerson,
Secretary of State.

SERVING IN THE CIVIC RANKS AS A TECHNICAL GUILDSMAN.

In connection with or in response to the call of the President for volunteers, the attention of all technical men,—i. e., men skilled in any line of science or mechanical, electrical, chemical, ordnance, explosives, mining, ship-building, railroad, motors, metallurgy or building of aeroplanes or water supply or sanitation, etc., is especially invited to the need of the army for such (young) men, aged 18 to 40, in sundry branches of Technical Troops concerning which Major J. E. Bloom, U. S. A., Newark, N. J., will be glad to give interested parties full particulars upon request

Any technical "men who are exempt" or who from any cause cannot "volunteer" can yet efficiently co-operate by forming Technical Patriotic Educational Guilds or other societies in their several industries or home neighborhoods, especially to look after the welfare of their neighbors in the service, and to give them the opportunity of obtaining technical assistance, opinions and advice from home, in any war industry, from time to time.

New Business Ventures.

Elwood, Ind.—A. Wiker and V. Blake have formed a partnership and opened a plumbing establishment on West Main Street.

Chariton, Iowa.—Fred Willits and James Bolton have formed a partnership under the name of Willits & Bolton and have opened a plumbing and heating establishment in the Hollinger & Larimer Building.

McHenry, Ill.—Charles Pelicon and John Pikner have purchased the plumbing and heating business of J. J. Vycital and will hereafter conduct the business under the name of the Vycital Plumbing, Heating & Sheet Metal Work Co.

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Three elements that go to make up the TRENTON Line of Plumbers' Brass Goods.

The master plumber who has used Trenton Products knows that they are dependable in every respect.

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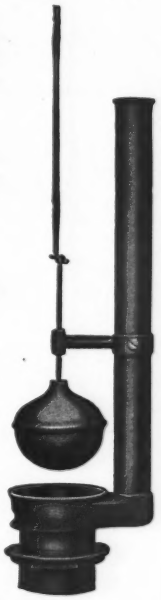
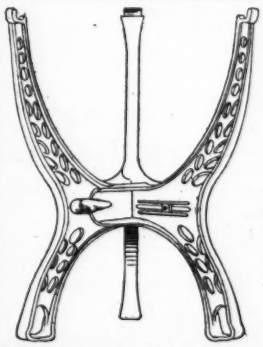
is not a new or untried fitting. Its reputation has been established by years of satisfactory service.

For safe, sure, high quality products, specify and use Trenton Brass Goods.



Order From Your Jobber

The Trenton Brass & Machine Co.
Trenton, New Jersey



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is pronounced the most efficient trap on the market, wherever it is in use.

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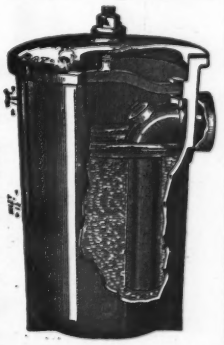
Special clean-out feature. Handhole is extra large, making it easy to remove grease.

Price within reach of all. Write for details.



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Classified Advertisements

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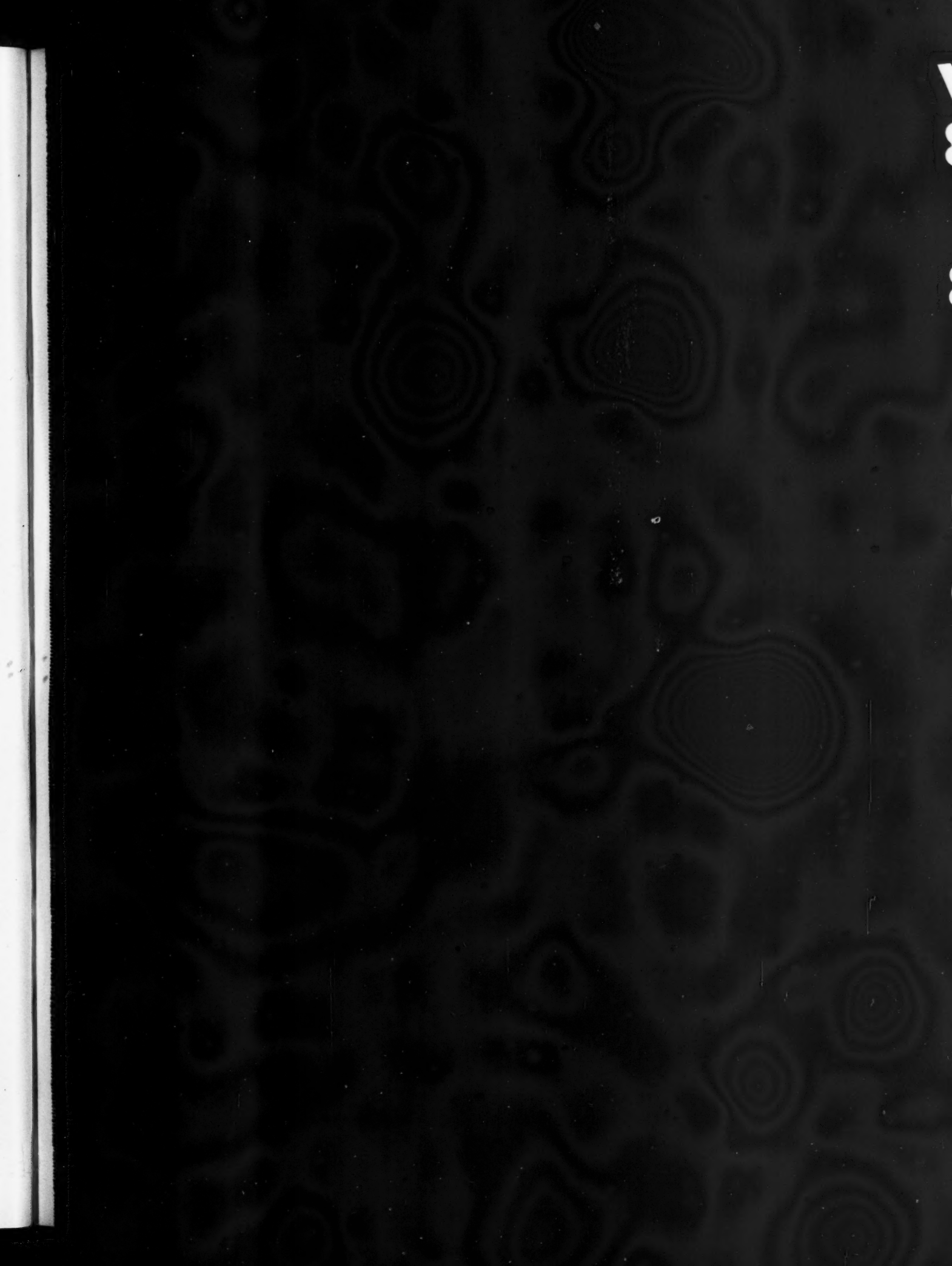
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